

October, 1912

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

OCT 7 1912
To keep the  coming in
during the winter months

~~Wanted an Answer~~ Wanted 100 Answers
---to This Question of Moment to Every Carpenter and Builder:
"How Can I Turn My Spare Time to
Profit During the Winter Season?"

THERE are hundreds of ways to do it. Enterprising readers of the "American Carpenter and Builder" are solving this problem successfully every year, adding many a neat sum to their winter income. We want to hear from these now—for the benefit of other builders.

What do you find most profitable? and what do you suggest? We are offering some valuable cash prizes for letters that give helpful ideas or tell of actual experiences in developing winter "side lines."

See Page 51 for Full Particulars.



Don't Deceive Yourself

Don't say "the old Saw is good enough for me." It really never was good enough. It did very well in the days when there was nothing better. It was "a good Saw" before the old ATKINS Company invented SILVER STEEL—before the days of the Perfection Handle, Taper Grinding and other exclusive ATKINS

improvements. But the really intelligent mechanic—who appreciates fine tools—can do better now.

ATKINS *Silver Steel* SAWS

They are in advance—just as the newest types of braces, planes, screw drivers and other tools are in advance of former patterns. The ATKINS Company has grown—has improved its methods of manufacture and processes of saw making, until to-day every mechanic can truthfully say to his brother workman—"Its the kind of Saw *you* ought to use."

How to Get Them

ATKINS SILVER STEEL SAWS are now for sale in nearly every hardware store throughout the country. Those dealers who do not happen to carry the particular Saw you wish will be very glad to order for you from their wholesale house. Pick out the Saw you wish and tell your dealer to get it for you. If he won't do this, then write to us and we will see that you are taken care of.

OUR FREE OFFER. We are compiling a list of high class mechanics. We want your name. If you will write us enclosing ten cents for postage, we will send you a fine carpenter's apron. Look in the pocket and you will find a little surprise with our compliments. Write to-day—now, while you think of it.

E. C. ATKINS & CO., Inc.

The Silver Steel Saw People

INDIANAPOLIS

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INDIANA

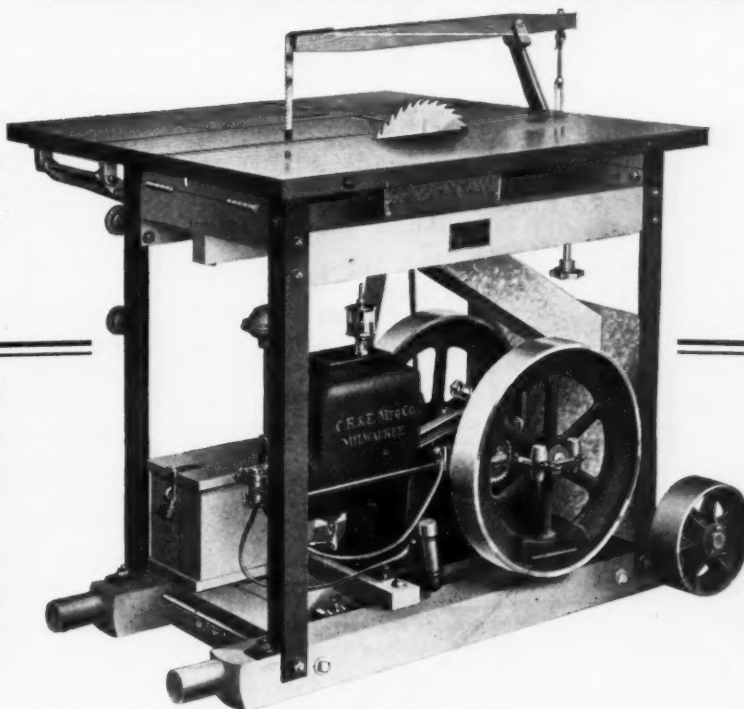
When Writing Advertisers Please Mention the American Carpenter and Builder.

BEATS A SEWING MACHINE

Marion, Ind., Sept. 9, 1912.

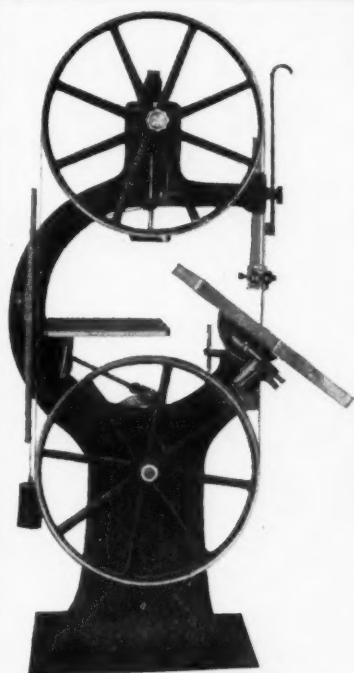
The portable saw rig is surely a wonder. I don't see how I got along without it. It takes the place of a carpenter, as a sewing machine does in a household.

M. G. Pepple & Co.



THE C. H. & E. No. 3
Portable Saw Rig can be wheeled to any part of your work in a minute. A turn of the Fly Wheel and the engine is started. Total weight of rig 697 lbs. Will **rip 2 inch and cross cut 3 inch lumber.** With the 12 different attachments you can do your own millwork.

C. H. & E. Manufacturing Co., Inc.
Manufacturers of
Contractors' Equipment
322 Mineral St., - MILWAUKEE, WIS.



27-Inch Chicago Band Saw

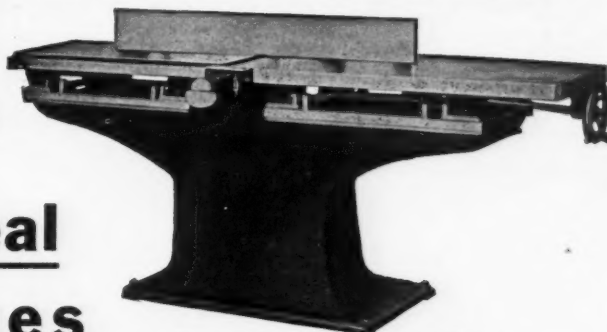
Send for our Free Special Catalogue today. We issue a catalogue of machines especially adapted to Contractor's and Builder's Use.

\$127.⁰⁰ for Both to Contractors and Builders

Ask for Price on One if You Can't Use Both

Used for Planing, Jointing, Shaping, Matching, Rabbeting, Grooving, Chamfering, Beading and Making Mouldings.

**Use Real
Machines**



Chicago 8-inch Jointer and Planer

READ what this user writes:

Dear Sirs:

July 1, 1912.

I received my 27-inch Chicago band saw and 8-inch hand jointer together with belting and pulleys shipped by you some time ago, and have been using them ever since—almost night and day, and must say they are as good as money can buy.

Thanking you for your promptness in filling the order, I remain

Yours truly, F. W. HAWES, Knoxville, Ill.

Chicago Machinery Exchange

1213-1223 Washington Boulevard - - - CHICAGO, ILL.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The American Floor Surfacing Machine

IS NO EXPERIMENT. Its work since 1903 has established a standard for finely surfaced and polished floors. It is the only machine whose work is specified by leading architects and used in the best government buildings and will surface and polish any kind of a floor from common pine to the finest parquet.

IT IS THE ORIGINAL and only two-roll, self propelled, dust collecting machine, that surfaces close to the wall and can be used in small rooms. Anyone can operate it.

ITS WORK IS RAPID, regular smooth and even because the power that drives the rolls, also propels the machine at the same ratio of speed. It has surfaced and polished millions of square feet of the finest floors in America and Europe.

GET A MACHINE that does first class work and in paying quantities, that is fully guaranteed and sold on its merits. Don't be fooled with an imitation.

Write for Our Free Book, "Surfacing Floors as a Business."

Manufactured By **The American Floor Surfacing Machine Co., TOLEDO, O.**



The Myers New-Way Adjustable Tandem Door Hanger



Is adjustable to and from buildings and permits the door to be raised or lowered as desired. This is a very important feature in cold weather when the ground is frozen and heaved up. It is absolutely dust proof and can be adjusted to keep out all snow and rain. Owing to its construction it will carry a heavier load than any other style tubular track. Another very important feature is its flexibility which permits the door to pass over uneven surfaces.

Write us for information and catalog.

F. E. MYERS & BRO.

ASHLAND, . . . OHIO

"It Works Like a Plane"

The Boss Floor Scraper

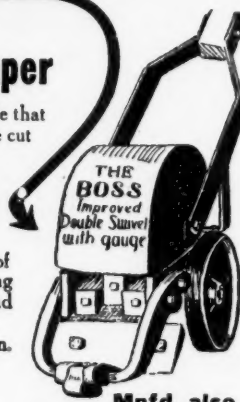
The "Boss" is the only Floor Scraper made that will plane a floor without leaving a square cut where knife first starts cutting. Why? Because the "Boss" is made with a gauge on front, to which is attached a pear-shaped wheel which raises when machine is pulled and lets the knife down gradually.

The "Boss" can be set for any thickness of shaving, it also can be set for any shearing cut right or left up or down to suit the kind of Lumber.

It is guaranteed to give absolute satisfaction.

G. J. KEPPLINGER

Main Office: - DWIGHT, ILL.



Mnfd. also in Canada.

You Can Do the Work of Three Men With This Machine

This Rapid Floor Scraper can save you the work of three men on every floor job you do as one man easily does more floor scraping with a Rapid Floor Scraper than three men with hand scrapers.

This Rapid Floor Scraper scrapes either hard or soft wood. It does not mark the floor in any manner. An automatic brush sweeps floor ahead of knife.

The Rapid Scraper is equipped with large wheels (12 inches in diameter).

Knives are easily adjustable. They can be quickly sharpened on machine. There are no bolts to loosen in either sharpening or changing knives.

A Rapid Knife Sharpener is included FREE with each machine and with it any man can easily and quickly sharpen the knives.

We want every Contractor, Carpenter and Builder to know about this Rapid Floor Scraper in detail. Write for our descriptive circulars—also particulars concerning our especially liberal FREE TRIAL offer.

Write for this information today and be sure and thoroughly investigate the Rapid Floor Scraper.

NOTE—Included FREE with every Rapid Floor Scraper and Rapid Knife Sharpener are also burnisher, oil stone and four knives.

Every Contractor—Every Carpenter—Every man doing any floor work—can more than pay for this Rapid Floor Scraper with the first job it is used upon.



The Rapid Floor Scraper

MONARCH MFG. CO.

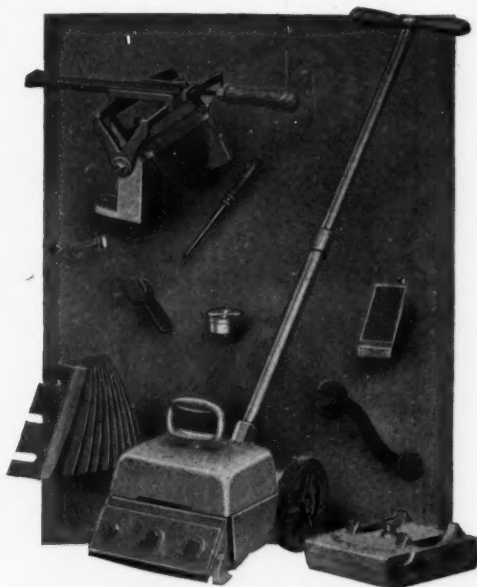
2610 Shepard Building

Grand Rapids, Mich.

When Writing Advertisers Please Mention the American Carpenter and Builder.

TRY IT FREE

and thereby convince yourself just what the



Acme Floor Scraping Outfit

can do on your own work

I do not expect or want you to buy a machine that you are not thoroughly familiar with, so in order to introduce my equipment to you and to permit you to fully investigate into its merits, I make you this offer:

I will send the complete Acme Floor Scraping Outfit, as here shown, to you for a WEEK'S FREE TRIAL. I will allow you to work the machines and if after you have given them a thorough trial you find that they do not meet with your entire approval, simply send the outfit back to me and you will owe me nothing.

If this proposition sounds reasonable and you want more information, drop me a line and I will forward booklet and full particulars by return mail.



The Acme Handy Mitre Gauge

is one of those little tools that is a great time saver. It fits in the pocket where it is always ready for immediate use. The dollar that you pay for this mitre gauge is the best investment that you ever made. If your dealer can't supply you, I can. Guaranteed absolutely accurate.

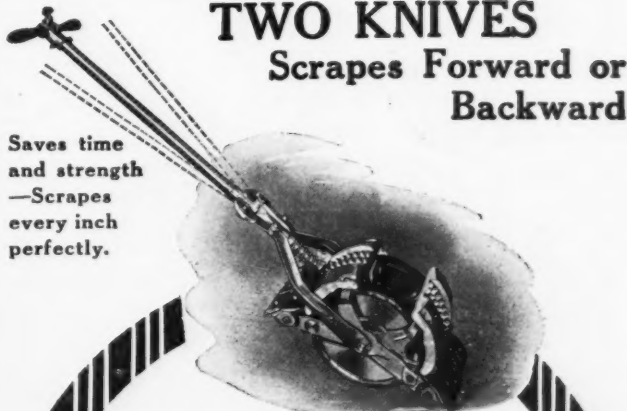
I have a circular that gives full particulars. Write for it today.

JOSEPH MIOTKE

247 Lake Street : : Milwaukee, Wis.

TWO KNIVES Scrapes Forward or Backward

Saves time
and strength
—Scrapes
every inch
perfectly.



Pull a while, then drop rear knife and push a while—the change rests your back and increases your speed. Double knife feature also enables you to reach the center of the smallest room. Knives drop at either end and let you right into the angle of the baseboard.

The WEBER DOUBLE ACTING Floor Scraper

works perfectly at all angles on any flooring—maple, oak, yellow pine, fir—with or against grain. Accurately balanced; makes a smooth "shearing" cut without a particle of side draft. Absolutely the only scraper of its kind. Prove its worth for yourself.

Try It Five Days FREE

on your hardest job—then put it up against any make you know of. If its work isn't the best you ever saw, the trial won't cost one cent. Send for circular and full details NOW.

JOHN F. WEBER, Pres.
Weber Mfg. Co.
670 71st Avenue
Milwaukee, Wis.

No
Chattering

No
Waves

DON'T BUY A FLOOR SCRAPER
of any kind until you have tested the

LITTLE GIANT

at our expense. Sold only on its merits. Shipped to you prepaid for a free trial. If not satisfactory in every particular, return it to us, at our expense.

Easy to
operate.
Will scrape your
floors rapidly,
perfectly and
economically.

Ask for special price on the
LITTLE GIANT.



The Thor Electric Home Laundry Machine

permanently solves the laundry problem in the home. More than 34,000 now in use. Sizes, designs and prices to meet every requirement. Free trial. Easy payments.

Write for full particulars.

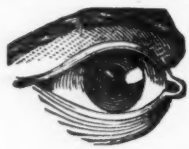


Hurley Machine Company

1008 Flatiron Building
NEW YORK

37 So. Clinton St.
CHICAGO

When Writing Advertisers Please Mention the American Carpenter and Builder.



The Contractor's Eye

is on the Floor Scraper *that does the work*

That's why today there are more Fox Floor Scrapers in use than all other kinds combined.

Doesn't this appeal to you?

THE FOX FLOOR SCRAPER

IS EASY TO OPERATE

SCRAPES A FLOOR PERFECTLY

NO REPAIR TROUBLE

(because its as simple as a scraper can be made)

SMALL INVESTMENT

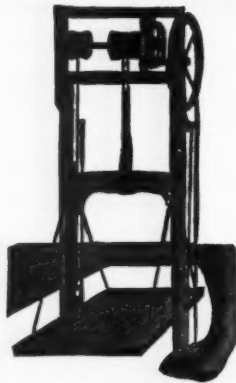
(the price is only \$25.00)

Want Proof? Send in a Free Trial Order. You take no chances.
Watch the Fox reduce your floor scraping expense.

FOX SUPPLY CO. Dept C, BROOKLYN, WIS.

FREE TRIAL OFFER

we will send you a Fox Floor Scraper No. 1. You may use it for **10 days**, trying it out thoroughly. If you are satisfied send us \$25.00. If you don't want it, ship it back, freight charges collect. Fair isn't it?



PERFECTION ELEVATORS

The Best Value for the Money in the World
—Mechanically Correct—

Dumb Waiters, Carriage and Store Elevators, Sidewalk Hoists, Etc., Etc.

Our Elevators are noted for their EASY RUNNING and SERVICE-ABLE QUALITIES. They are practically self-contained, and can be erected by any carpenter in a few hours. We furnish plans for erecting.

The Low Cost Will Surprise You

State your requirements, giving capacity, size of platform and number of feet to travel and we will name our lowest money saving estimate.

SIDNEY ELEVATOR MFG. COMPANY, SIDNEY, OHIO



**DUMB WAITERS
AND
HAND ELEVATORS**
OF THE MOST IMPROVED
AUTOMATIC CONSTRUCTION
INVALID LIFTS
TRUNK, CARRIAGE,
SIDEWALK AND
FREIGHT ELEVATORS
SEDGWICK MACHINE WORKS
128 LIBERTY ST. NEW YORK
CATALOGS AND
ESTIMATES FURNISHED
SEE SWEET'S INDEX



Excelsior Dumb Waiters

The only Knock-Down Dumb-Waiter ever offered, shipped complete to a nail, with explicit directions for erecting, for **\$18.50**

Up-to-Date in Every Particular

Hardwood Car, Self Retaining Machine, Adjustable Weight, Guides, Ropes, Timbers and Hardware. Ropes joined by coupling. No Splicing. Will fit any ordinary opening up to 24" x 30"

Send for Printed Matter

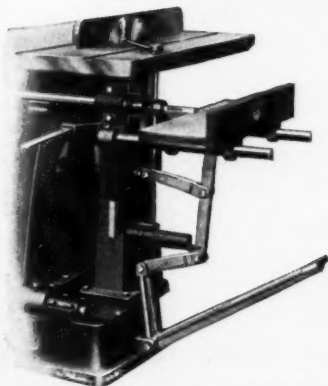
R. M. RODGERS & CO.

74 Emerson Place - - Brooklyn, N. Y.

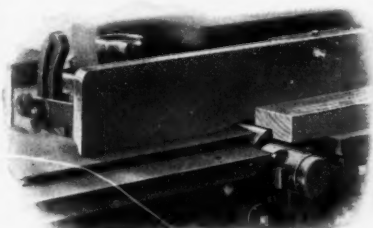
When Writing Advertisers Please Mention the American Carpenter and Builder.

Increase Your Profits Cut Down Your Costs Do More ^{AND} Better Work

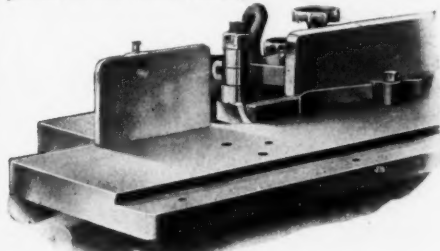
With This CRESCENT UNIVERSAL WOODWORKER



This attachment converts the borer into a hollow chisel mortiser, suitable for cutting mortises up to $\frac{1}{2}$ inch square.



This shows how to do rabbeting on the jointer. You can't do this on every jointer. How it is done on a Crescent is fully explained in our latest catalog.



It is a very easy matter to work quarter round or moulding on the shaper spindle. The pressure spring holds the work securely up against the fence.

¶ This woodworking equipment—our Crescent Universal Woodworker complete with band saw, jointer, saw table, reversible single spindle shaper and borer you want to make a part of your working force.

¶ In any Carpenter's or Contractor's Shop, Supply or Lumber Yard, this Crescent Universal Woodworker will be a money maker—a money saver. You can do more and better work with this woodworking equipment in less working cost and time.

¶ Here is a woodworking machine that is practical in every way;—that is compact;—that is convenient;—that is especially adapted for your kind of work;—that is easily and economically operated.

¶ This Crescent Universal Woodworker gives you all the facilities of a fully equipped planing mill. It is a five in one machine—five separate, complete, machines in one—a combined band saw, jointer, shaper, saw table and borer. Each machine is in every way independent of the others. It is a machine that four men can work on at one time without interfering in any way with each other. Each machine can be started and stopped independently of the others.

¶ Our Crescent Universal Woodworker is built of quality material in every respect. It is thoroughly strong throughout. It is always in workable condition. Attachments include a mortiser, tenoner, panel raiser, emery wheel, knife grinder, disk grinder, dado head and resaw gauge. Crescent Universal Woodworker does away with all separate countershafts.

¶ We equip our Crescent Universal Woodworker with either a 26-inch or 32-inch band saw and either an 8-inch, 12-inch or 16-inch jointer. We can also furnish you with the Crescent Universal Woodworker without the band saw equipment.

Our new 128 page 1913 catalog is just off the press. It illustrates and describes in detail our Crescent Universal Woodworker in detail. It also tells about our complete line of band saws, jointers, saw tables, planers, shapers, swing saws, disk grinders, matchers, etc.

¶ Let us mail you your copy of our new catalog. Read it through thoroughly. Investigate our Crescent Universal Woodworker in every way before you decide definitely upon any certain woodworking equipment. Let us hear from you today—SURE.

THE CRESCENT MACHINE COMPANY
224 MAIN STREET LEETONIA, OHIO

When Writing Advertisers Please Mention the American Carpenter and Builder.

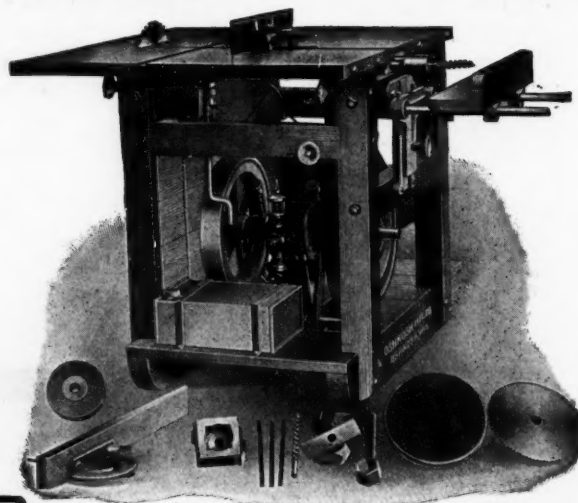
The

TRADE MARK
OSHKOSH

"Eveready"

SAW RIG

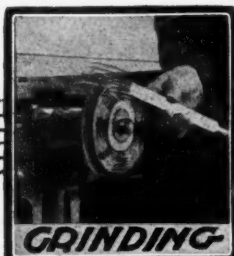
Does a whole lot of things besides sawing—More than these pictures show



"Guaranteed for Life"



TENONING



GRINDING

Seven **Attachments FREE** Extra



SANDING

When we say "extras" we do not count the wrench, spark plug, rip and cross-cut saws, etc.—parts that naturally come with any saw rig. With the "Eveready" you get seven **real** attachments—and you get them the first time, with the machine, free of all charge. That is why we can honestly advertise it as a "whole planing mill in itself." Five of these extra operations are pictured here, but—besides one 10-inch rip and one 10-inch cross-cut saw—you get these:

Jointer Head—This works on exactly the same principle as an up-to-date planer. Produces a smooth, even job, with no deep cut as the material leaves the jointer head. 2½ inches in size.

Boring Attachment—A high-class attachment. Guaranteed absolutely accurate. Extra long boxes insure easy long-running qualities on the guides. Blits, standard size.

Jig Saw—Not a cheap one, but the best 12-inch jig we can make. All joints reinforced with steel, equipped with brass bushings. Once use it and you won't part with it.

Sander—The best one yet—a great time and money saver

over old methods in change and economy of paper. Our methods of holding paper will not blister, as do many others. 10 inches in diameter.

Saw Gauge and Mitre Device—Saw gauge of best gray iron, 18 inches long, adjustable to any bevel. Mitre device adjustable to any angle and can be used as a cross-cut gauge.

Dado Head—Our own special design. Does smooth, even work with or across the grain. Makes window frames, dados, etc.

Emery Wheel—A 6-inch wheel made for grinding tools is also furnished with this rig.

Try the "Eveready" a Week FREE

Put all its attachments to work—right out on the job. Two men can easily swing it into a light wagon and have it there in no time. And they won't have the least trouble operating it when they get it there. If after seven days, you can get along without it (which we doubt) notify us and we will take it away at once, making absolutely no charge for the trial. You may wonder how we can do this. All we can say is that we have been making saw rigs for so many years now that we are onto the "hang of it" and can guarantee without reserve every inch of them. Send for printed matter and full particulars of this offer today—get in on some of those low, but very profitable bids that bob up every day and play so much havoc with things.



BORING

OSHKOSH MANF'G. CO.

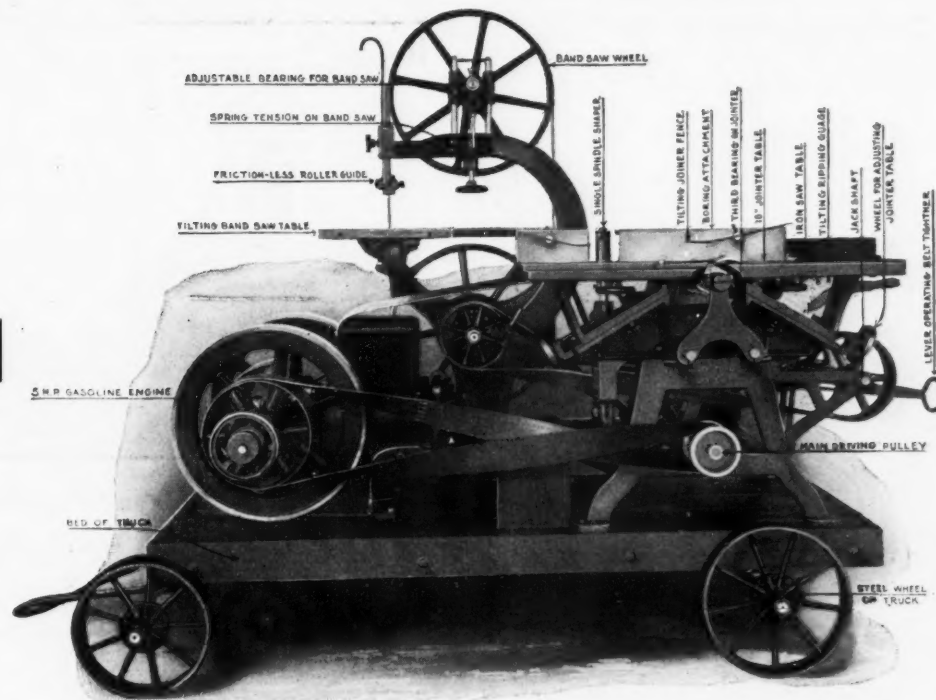
316 South Main Street

OSHKOSH, WIS.



JIG SAWING

When Writing Advertisers Please Mention the American Carpenter and Builder.



A New Famous Woodworker —Portable Type No. 3

This is the machine you have waited for—a Universal woodworker—several machines combined on one base—equipped with its own power plant—ready for instant operation in your shop **or right at the job**—easily moved around from place to place.

This describes the FAMOUS No. 3 Portable Universal Woodworker, which combines: 27-in. Band Saw; 10-in. Jointer; Upright Shaper; Boring Machine, and Saw Table, all driven by a 5 H. P. Gasoline Engine, which forms part of the equipment.

This gives you practically all the machinery you need—enables you to do your own millwork—right at the job. It means an enormous saving in time and labor costs. It allows you to outbid competition.

Doesn't cost much to buy; costs nothing for repairs because we guarantee it for life. Write for details of construction and particulars of our liberal terms.

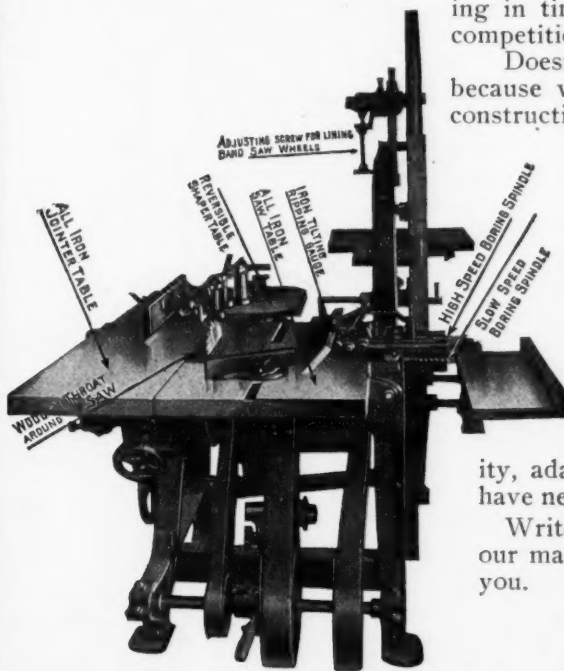
Stationary Types

Over 1,300 FAMOUS Universal Woodworkers are in use today, embracing types and sizes to suit all requirements. Our unequalled experience has helped us make the FAMOUS a **success**, while imitations are still in the experimental stage.

The stationary types of FAMOUS Universal Woodworkers combine up to sixteen machines in one. Their durability, reliability, simplicity and rapidity of operation have never been equalled.

Write for our complete catalog which describes all our machines. It shows the way to bigger profits for you.

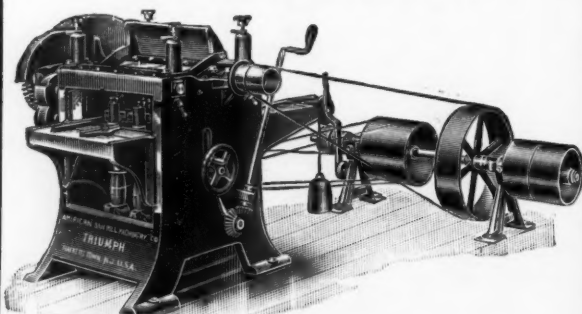
THE SIDNEY TOOL CO.
SIDNEY, :: :: :: OHIO



When Writing Advertisers Please Mention the American Carpenter and Builder.

"TRIUMPH" PLANER, MATCHER and MOULDER

Also Built as a Double-Surfacar



Here is just the machine you need to make your equipment complete. The "Triumph" is a small planer for the small or moderate sized plant which prides itself on maintaining a high-grade output.

We can't begin to tell you here all the good points of the "Triumph." You will need the pamphlet to tell the whole story of "Triumph" superiority.

But if you want a small, moderate priced planer and moulder that will do work equal to that of the largest, most expensive machine, the "Triumph" is the one you should have.

AMERICAN SAW MILL MACHINERY CO.

82 Main Street
HACKETTSTOWN, N. J.

1655 Hudson Terminal
NEW YORK CITY



Belt Drive

GRIMM WOODWORKER

9 Machines in 1
The Handiest, Most Prac-
tical Time Saving
Machine Made

It will complete all the work you now have done at the planing mill, such as ripping, cross cutting, dadoing, jig sawing, jointing, boring, moulding, sanding and emery wheels. Get a Grimm and increase your profits.

Built with belt or electric motor drive, also gasoline engine for portable use.

Thousands in use.
Send for catalogue and prices.

GRIMM MANUFACTURING CO.

46 Erie St.,

Buffalo, N. Y.

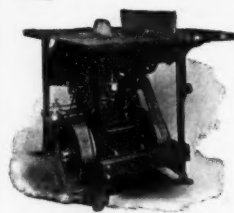
Before You Buy That PORTABLE WOODWORKER

Consult Us!

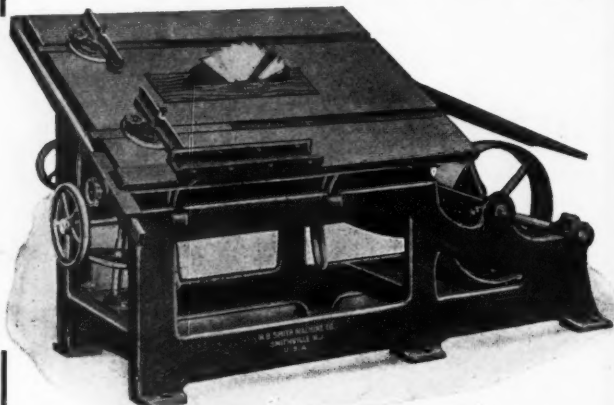
UNITED MACHINERY CO.

86 Centre St., New York

Specialists in Woodworking
Machinery for Contractors, Car-
penters and Builders.



Woodworking Machinery



A NEW SAW BENCH with Parallel Hoist,
and Heavy enough to drive a 30" Saw.

Send for Circular. Address:

H. B. SMITH MACHINE CO.

SMITHVILLE, N. J.

NEW YORK CHICAGO ATLANTA SAN FRANCISCO



No. 3 Improved Variety Saw

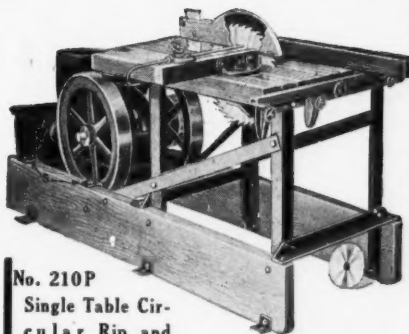
WILL do many different kinds of work, and is really a first-class woodworker. Yet you get it at a variety saw price. A fine investment for the contractor.

Write for circular fully describing it.

J. A. FAY & EGAN CO.

545-565 W. Front St. :: Cincinnati, O.

When Writing Advertisers Please Mention the American Carpenter and Builder.



No. 210P

Single Table Circular Rip and Cross-Cut Saw Complete with engine and clutch ready to start and stop saw, belted up \$67.50 ready for use.

ATTACHMENTS THAT CAN BE ADDED

A—22-inch Band Saw.
D—Boring Attachment.
E—Tenoning Attachment.
F—3-inch Jointer.
G—6-inch Jointer.
H—Tilting Guide.

ALSO

Jig Saw.
Emery Wheel.
Sand Disk, etc.

Machines are made in large quantities, which enable us to sell at lowest prices and make immediate shipment.

PARKS BALL BEARING MACHINE CO.

Fergus St. and C. H. & D. Ry.

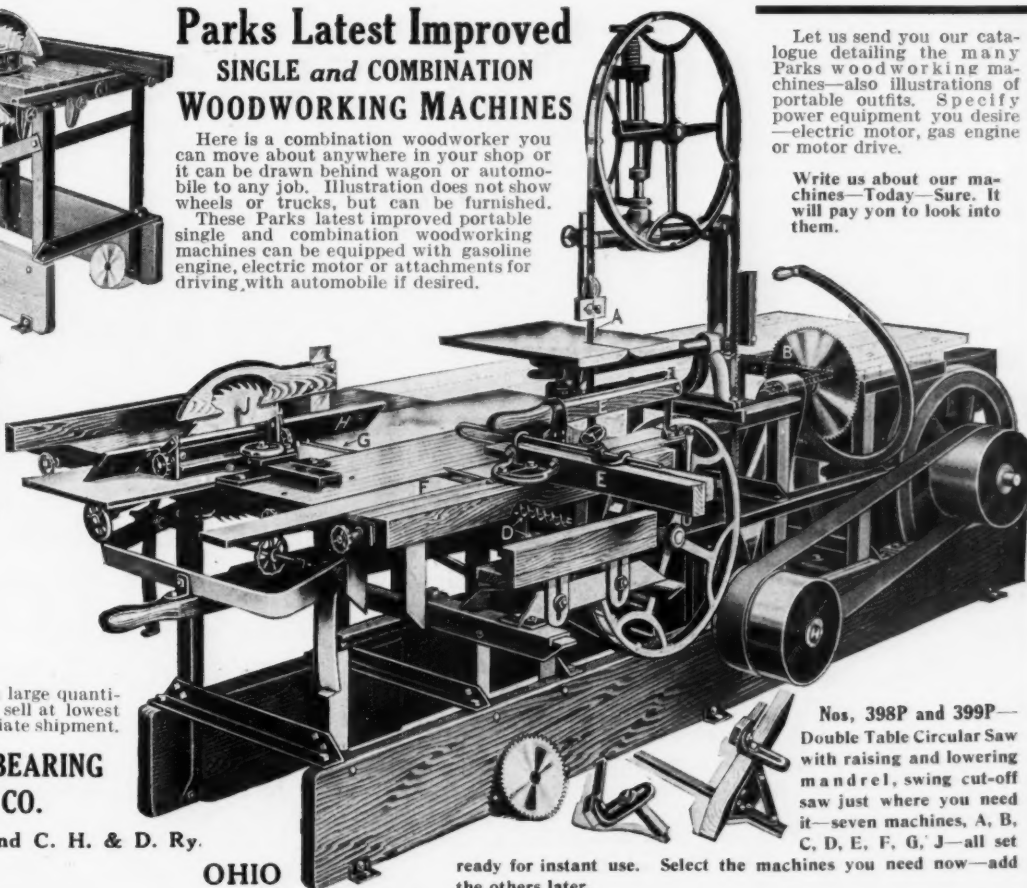
CINCINNATI

OHIO

Parks Latest Improved SINGLE and COMBINATION WOODWORKING MACHINES

Here is a combination woodworker you can move about anywhere in your shop or it can be drawn behind wagon or automobile to any job. Illustration does not show wheels or trucks, but can be furnished.

These Parks latest improved portable single and combination woodworking machines can be equipped with gasoline engine, electric motor or attachments for driving with automobile if desired.



Let us send you our catalogue detailing the many Parks woodworking machines—also illustrations of portable outfits. Specify power equipment you desire—electric motor, gas engine or motor drive.

Write us about our machines—Today—Sure. It will pay you to look into them.

Nos. 398P and 399P—Double Table Circular Saw with raising and lowering mandrel, swing cut-off saw just where you need it—seven machines, A, B, C, D, E, F, G, J—all set

ready for instant use. Select the machines you need now—add the others later.

FOOT, HAND AND LIGHT POWER WOOD-WORKING MACHINES



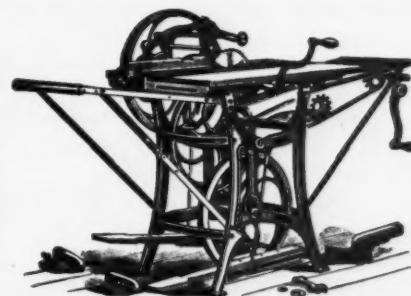
"Victor" Scroll Saw



"Diamond" Mortiser

Carpenters, Builders, Cabinet-Makers and other woodworkers can successfully compete with large shops by using our labor saving machinery. Save for yourself some of the profits you have been paying to the mills. With our machines one man will do as much work as four to six men using hand tools; will do it easier; will do it better.

Send for Catalog "A" describing our complete line



No. 5 "Union" Self Feed Rip and Cross-Cut Saw

THE SENECA FALLS MFG. CO.

218 Water Street

SENECA FALLS, N. Y., U. S. A. (249)

SEE HERE—Read What A Big Contracting Firm Says About Our Double Arbor Rip and Cut Off Machine

HEDDEN CONSTRUCTION COMPANY,
Builders

Subject: Northwestern Mutual Life Building of Milwaukee, Wis.,

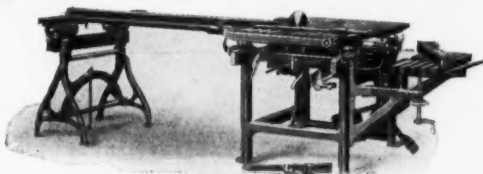
Milwaukee, Wis., June 12, 1912

Beach Manufacturing Co., Montrose, Pa.

Gentlemen:—We beg to acknowledge your favor of the 7th inst., in reference to the No. 3 Double Arbor Rip and Cut-off Machine which we purchased from you. In reply to same, beg to advise you that we have been entirely satisfied with the work performed by this machine and found it to be a great labor saving device.

RWB/NC.

These Portable Double Arbor Rip and Cut-Off Saw Machines with either Iron or Wood Frames, can save you time, labor and material on any job. The machines are easily portable and require but small space to operate in. They are equipped with either electric motor or gasoline engine.

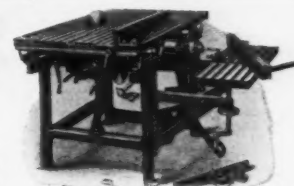


Our Double Arbor feature gives you in one machine a Rip and Cross-Cut Saw ready for use at any time. Their boring attachments require no pushing of lumber to bit. The bevel gauge will make any cut that can be made on a tilting top table. The mitre gauge can be set to any angle—right or left. The dado head can be used in either saw arbor.

Our table extension is framed together, trussed to prevent springing and provided with steel lumber roll, at outer end.

We guarantee these machines in every respect. Write us today about them. Get our catalog "M."

BEACH MANUFACTURING CO. - MONTROSE, PA.



When Writing Advertisers Please Mention the American Carpenter and Builder.

Our Expert Service Department

The American Carpenter and Builder receives many requests daily for information from its readers. Some of them want help on work that is new or unusual. Others want to buy machinery, tools, equipment, supplies, and materials and ask us to recommend what is best suited for the purpose and to give them advice where to buy it. In short, many thousands of our readers rely upon the Editorial and Business Departments of the American Carpenter and Builder in helping them to solve problems of various kinds and on all sorts of subjects.

Free Information for Our Readers

It is a pleasure for us to render this assistance to our readers. We welcome every opportunity to help them in any way. We have a splendidly organized Information Department which takes care of these matters. This department is called "Radford's Expert Service," and is composed of a staff of practical builders, engineers, architects, draftsmen, and writers, able to take care of all matters relating to construction.

Brings Buyers and Sellers Together

This "Expert Service" has a completely indexed reference department, consisting of the names and addresses of manufacturers and dealers in everything that is bought or used by contractors, builders, carpenters, architects, draftsmen, engineers, or any one engaged in any branch of the building industry.

Market Place of the Building Field

Immediately upon receipt of a communication asking where the writer can obtain a certain tool, machine, equipment, materials, supplies or any article, whether it is or is not advertised in our magazine, we write to manufacturers or sellers whom we know to be reliable and can furnish goods promptly. Letters are sent out the same day the request is received and in each case care is taken to write to firms nearest the location of the intending buyer, so as to make carrying charges as light as possible should a sale be made.

Our Complete Equipment

We want more of our readers to avail themselves of this "Expert Service." It is absolutely free to those who use it. Our facilities for gathering and furnishing information are unequalled by any other publication in the building field. The American Carpenter and Builder is affiliated with the Cement World and the Dealers Building Material Record, the three magazines comprising the Radford Publications. The Radford Publications have their own drafting rooms, architectural department, blue printing machinery, and a large staff of experienced, practical writers and artists. It has a reference library (second to none in the world) of books, pamphlets, periodicals and catalogues covering the entire construction field.

Prompt and Practical Help

Expense is not considered and the most painstaking care and attention is given to any request sent to our Expert Service Department. We most cordially invite our readers to make full use of it at any and all times.

If you want to get expert service on any problem of building, engineering, or paving, or if you want information about work that you do not understand, state such particulars as will help us to give you an intelligent answer to your questions.

If you want to buy anything, or if you want more information about something that is not advertised in the American Carpenter and Builder, or if you want to know more about something that is advertised, fill out the coupon below. We will place you in touch with manufacturers or dealers who will furnish you with just what you want and at the best prices.

Expert Service Department

AMERICAN CARPENTER AND BUILDER
178 West Jackson Boul., Chicago, Ill.

Gentlemen: We are in the market for the items specified below. Please put us in touch with manufacturers whom you know to be reliable and can furnish goods promptly. Yours very truly,

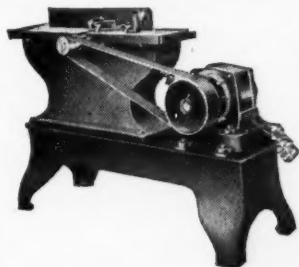
ITEMS: _____ Name _____

Street and No. _____

Post Office _____ State _____

When Writing Advertisers Please Mention the American Carpenter and Builder.

The Porter 5" Jointer



Is used for Jointing, Planing, Moulding, Beveling, Rabbeting, Grooving, and any other work that any Jointer can be used for. We furnish it with or without countershaft, bench or motor. Just as you desire. The **Best** machine for the money on the market. We make 6 larger sizes, and Wood Lathes, Shapers, Planers, Cut-off Saws, Band Saws and Saw Tables.

C. O. Porter Machinery Co.
666-668 Front Ave., N. W., Grand Rapids Mich.

COMPLETE OUTFIT PRICE \$15.00 HAND AND FOOT-POWER MACHINERY

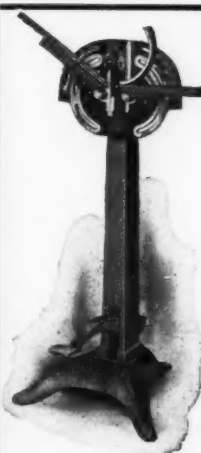
Our No. 7 Scroll Saw is warranted to be made of good material and workmanship, and to saw pine 3 inches thick at the rate of one foot a minute.

Send for
Catalogue.

W.F. & Jno. Barnes Co.

74 Ruby St.

ROCKFORD, ILL.



Guaranteed to Save

75%

Your Money Back if it Don't

We guarantee the American Sash Trimmer to save at least 75% of the cost of fitting fancy sash by hand.

Also that joints fitted with it are far superior to those fitted by hand, and we want to ship you a machine on trial.

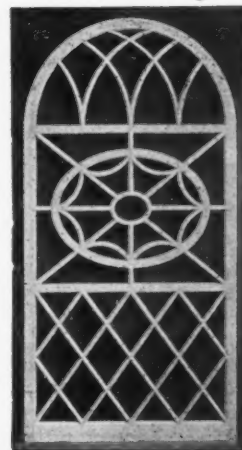
If the machine doesn't come up to our guaranty, you may return it charges collect.

Everything to gain, nothing to lose.

*Send for particulars of
our free trial offer.*

THE HEALD MACHINE CO.

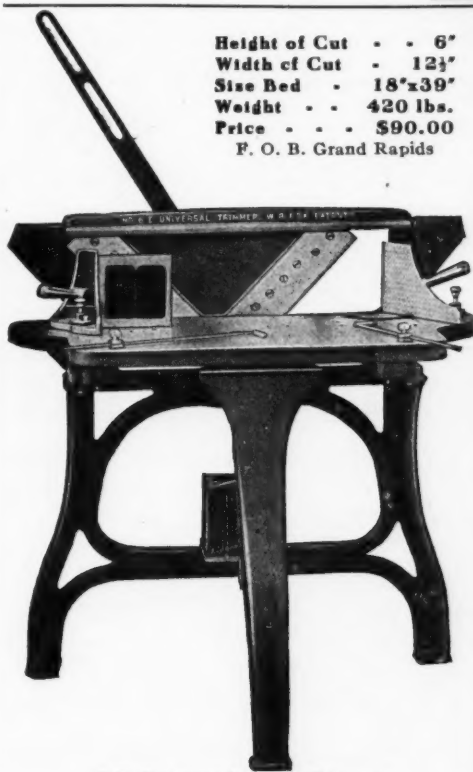
2 New
Bend St. Worcester, Mass.



TRADE

FOX

MARK



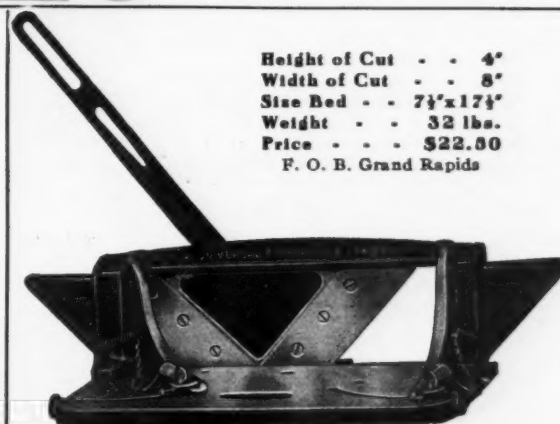
6-E Universal Wood Trimmer

Height of Cut . . . 6"
Width of Cut . . . 12 1/2"
Size Bed . . . 18"x39"
Weight . . . 420 lbs.
Price . . . \$90.00
F. O. B. Grand Rapids

Bench and Floor Type

Universal Wood Trimmers

To Meet Every
Demand



4-A Universal Wood Trimmer

Height of Cut . . . 4"
Width of Cut . . . 8"
Size Bed . . . 7 1/2"x17 1/2"
Weight . . . 32 lbs.
Price . . . \$22.50
F. O. B. Grand Rapids

EVERY PATTERN SHOP, INTERIOR FINISH MILL, FURNITURE FACTORY, and others doing work requiring **perfect glue joints and angles** should have our Trimmers or Miter Machines to produce the best results.

WRITE TODAY FOR COMPLETE CATALOG OF OUR TOOLS

FOX MACHINE CO.

22 N. Front Street
GRAND RAPIDS, MICHIGAN
30 Church Street, New York
J. B. STONE & CO.,
135 Finsbury Pavement, E. C.

When Writing Advertisers Please Mention the American Carpenter and Builder.



The Carpenter says:

The Master Brace

is his idea of what a brace ought to be.

Its general appearance delights the lover of fine tools. The metal parts are handsomely nicked and the head and handle are of finely finished cocobola.

The chuck securely holds straight shanks from $\frac{1}{2}$ to $\frac{3}{4}$ inch, and all sizes and styles of bits, tapers and irregular shaped shanks. The milled jaws have eight sharp holding points of contact with the shank giving unusual tenacity of grip.

Jaws adjust themselves exactly to the shape to be held. Our patent cup washer prevents chuck from working loose.

A Distinct Masterpiece in its every Function

The effective and positive ratchet device is concealed, protecting the parts from dust. Has ball bearing head and center handle, the latter being adjustable. The sleeve is of a new pattern just fitting the hand, and is reinforced at the lip to meet the strain at that point. The tail socket is made from solid bar steel, unbreakable under the severest usage. The jaws are so hinged upon a spring as to transmit any strain to the stout sleeve. The Master Brace is made in 4 sizes—8, 10, 12 and 14 inch sweep.

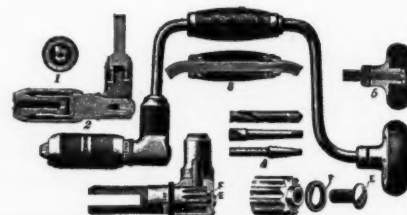
Send for our **FREE** book "Tool Practice"

Millers Falls Company

28 Warren Street

::

NEW YORK CITY

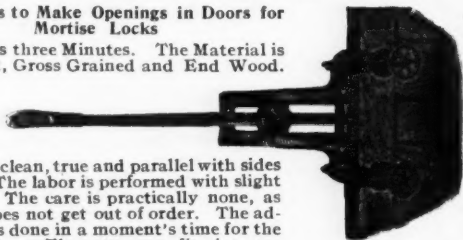


Miller's Hand Mortiser

WILL SEND ON APPROVAL

Its Work is to Make Openings in Doors for Mortise Locks

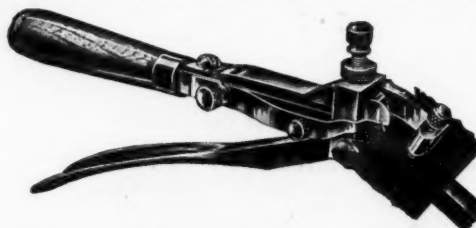
The time is three Minutes. The Material is Hard, Soft, Cross Grained and End Wood.



The job is clean, true and parallel with sides of door. The labor is performed with slight exertion. The care is practically none, as the tool does not get out of order. The adjustment is done in a moment's time for the different sizes. The cutters are five in number and cover locks from $\frac{1}{2}$ inch to $1\frac{1}{2}$ inches thick. Thin doors are handled as easily as thick doors.

Riverside, Cal. A. W. MILLER MFG. CO. Cincinnati, O.

WE ARE SURE THAT ONE TRIAL OF OUR



NEW "COMPLETE" SAW SET

will convince you of its extreme merit. Order of your dealer or we will send sample by mail.
Black.....75c. Nickel.....\$1.00.

OTIS A. SMITH Box 95 Rockfall, Conn.

INTRODUCTORY TRIAL OFFER

If the SELF-SETTING PLANES are not sold in your town and you write us saying, "I saw your trial offer in A. C. & B.," we will send you particulars, a carpenter's pencil and our \$1.00 Certificate, which we will receive as \$1.00 in payment for a SELF-SETTING PLANE as stated in our \$1.00 Certificate, and if this S. S. Plane is unsatisfactory and returned to us at our expense, we will send you \$1.00 more than you sent us, as the \$1.00 Certificate says.



As this paper guarantees we will do as our advertisement says, you know the plane must be O. K. ALL WE ASK is to have you TRY the SELF-SETTING PLANE on your own bench, in your own way, with or against the grain, on the WORST cross-grained eaty, knurley, knotty, hard or soft wood you can find, THAT IS FREE FROM SAND OR DIRT. If it is not worth to YOU, OR YOUR MEN, TWICE ITS COST, return it at our expense as above stated.

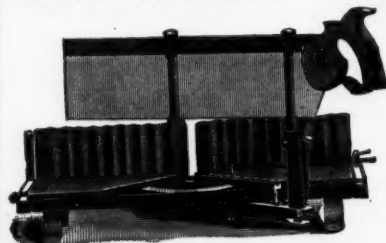
If you send us the addresses of ten carpenters, no matter where they live we will send you another hard, tough carpenter's pencil. Give the SELF-SETTING PLANE a chance to PROVE ITS WORTH, if it FAILS, return it and we will return your money.

Carpenters' Hard, Tough Pencils, 30c per dozen, postage prepaid.

GAGE TOOL CO., Vineland, N. J.

GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality and Improvements

Automatic Stops for holding up saw.

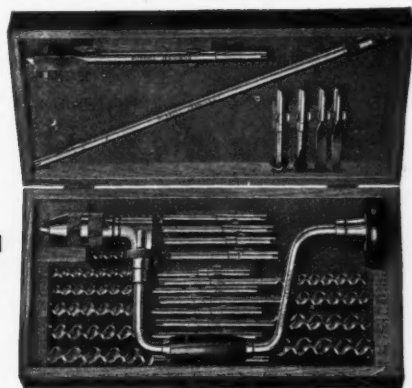
Corrugated Backs Graduated.

Gauge for duplicate cuts and many other features

Send for Circular "C"

GOODELL MFG. CO., Greenfield Mass.

When Writing Advertisers Please Mention the American Carpenter and Builder.



A Man Is Known By the Tools He Uses

If he can take pride in his tools, his work is generally worth taking pride in.
The new

Russell Jennings Precision Tools

with turned shanks, are tools that any man will be proud of, and the results he can produce with them will certainly please him. These tools are the well-known Russell Jennings bits, with the correct double twist, extension lip, and screw point, and with the new turned shank. Other Precision tools are a new solid head expansive bit, with a cutter that can't creep, a bit extension that stays in line and can't pull out of the brace chuck, screwdrivers, countersinks, etc.

Sold separately or in sets.

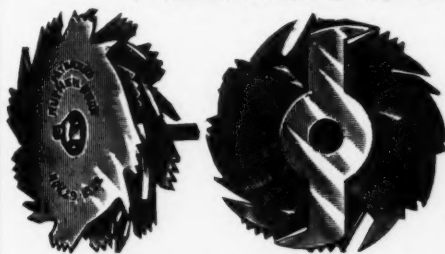
If your dealer can't show you a set let us know.

Russell Jennings Mfg. Co., Chester, Conn.

21-83

Huther Bros. Patent Groover or Dado Head

(Will save it's cost in three days' time)



Showing Arrangement of Cutters

of concave ground smooth cutting circular Mitre Saws, for either rip or cross cut; Grooving Saws for all kinds of special work; Lock, Corner Cutters Concave Saws, etc.

Try our Scraper Blades and you will use no others.

HUTHER BROS. SAW MFG. CO.

1000 University Ave.

ROCHESTER, N. Y.

Can be used on any Circular Saw Mandrel

For cutting any width groove from $\frac{1}{4}$ " to 2" or over. Will cut a perfect groove, either with or across the grain, and leave edges smooth. Will ship to any responsible firm on ten days' approval; if not satisfactory you are at liberty to return at our expense. We also make a specialty

LUFKIN

Tapes & Rules

are Standards of Accuracy, Durability and Workmanship.

SEND FOR CATALOG

THE LUFKIN RULE CO.

SAGINAW, MICH.

NEW YORK
LONDON, ENG.
WINDSOR, CAN



"YANKEE" DRILL No. 50

is the quickest Hand Drill made for small holes in wood or metal up to 3-16 inch.

The double (Backward and Forward) action of the Driving Handle is light and quick, and gives it a speed that cannot be matched by any geared drill.

A great convenience to any mechanic who has a large number of holes to drill in awkward places. The price, \$2.50 from the factory if you cannot get it from your dealer.

Send for "Yankee" Tool Book telling you about a number of "Yankee" Tools.

Your dealers sell the "Yankee"

North Bros. Mfg. Co.

Department A

PHILADELPHIA, PA.



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400% PROFIT ON
"THE HOUSE THAT JACK BUILT"

\$200
PROFIT
ON
\$50-00
INVESTMENT

\$100
PROFIT
ON
\$25-00
INVESTMENT

PAINE LUMBER COMPANY LTD.
OSH KOSH WISCONSIN

MR. BUILDER
YOU MUST CUT OUT

1st: "Cut out" high
2nd: CUT OUT

Send it to us
"The House
for Paine
by spending

The book
and is attract
drawings and examples
You want this book.

More than two-thirds of the
PAINE factory shown below.

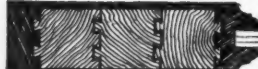
We Manufacture Everything

PAINE

KLIMAX

"ORIGINATORS OF THE STANDARD

OSH KOSH WIS





KORELOCK

When Writing Advertisers Please Mention the American Carpenter and Builder.

R: To Make More Money UT OUT TWO THINGS:—

prices and low quality. They don't pay.

THIS COUPON  and get the NEW PAINE BOOK—it DOES Pay 

and you will receive promptly our *new* volume *that Jack Built*" It proves that by spending \$25 more doors and trim you increase your value \$100—how \$50 more for Paine doors and trim you add \$200 value.

relates the actual experience of a home-builder vividly illustrated. It also contains *valuable detail* of the best selling styles in the best made doors. *Write for No. "A."* Get it at once. You need it.

world's standard veneered doors reach the user through the immense Correspondence invited from contractors and builders throughout the world.

Known in Millwork—in Every Kind of Wood

PAINE LUMBER CO., LTD.

HARDWOOD VENEERED DOOR"

CONSIN U. S. A.

KORELOCK

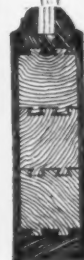
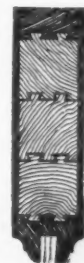
Clip this
Coupon
NOW

Paine Lumber Co., Ltd.
Oshkosh, Wis.

GENTLEMEN: Please
send me your book, "*The
House That Jack Built*"
by return mail.

Name _____

Address _____



KLIMAX

When Writing Advertisers Please Mention the American Carpenter and Builder.

WHICH IS
YOUR
CHOICE
?

THERE'S
A
DIFFERENCE

I SHOULD
SAY THERE
WAS!

"B" (STUNG)

SEND FOR
"SHORTY" GOT AN
ARROW HEAD,
HIGH GRADE TOOLS —

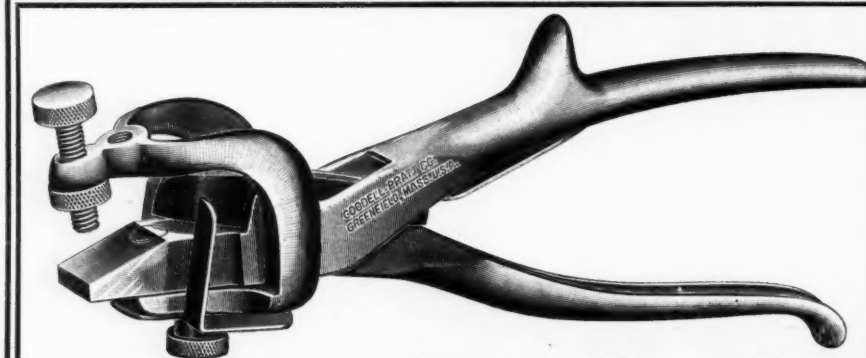
ALWAYS ORDER
ARROW HEAD

CIRCULAR "P"
"POP," A SUBSTITUTE
INSTEAD!

— ACCEPT NO SUBSTITUTE —

— C. E. JENNINGS & CO., 42 MURRAY ST. NEW YORK —

Saw



Sets

This Saw Set

is so designed that it can be used on wide or narrow saws with equal efficiency, and another thing, the teeth of the saw are always in sight of the operator; this insures accuracy in setting.

The Frame and Handles are made of malleable iron; the inserted Anvil and Jaw are made of steel carefully tempered.

This saw set is thoroughly well made, all steel parts are polished.

It is 8 inches long and weighs 17 ounces.

Goodell-Pratt's

GOODELL-PRATT COMPANY

Toolsmiths

Greenfield,

Mass., U. S. A.

Whether it be

Saw Sets, Breast Drills, Automatic Drills, or any Carpenter's Tool if it bears the name Goodell-Pratt you can depend upon it that you are getting the best thing in that particular line that it is possible to buy.

Goodell-Pratt's Tools are just brimful of quality. If you have used them you know this to be a fact; if you have not, then send for Our Catalog, 304 Pages, 1200 Tools and Devices.

It is **FREE**

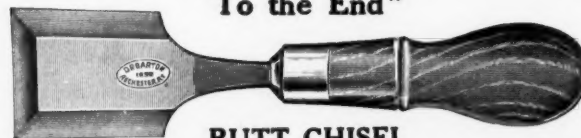
THE FOLDING DRAW KNIFE

It's the Draw Knife that's the seller
Right up to the Draw Knife law;
It's the workman's prize and treasure,
And the Draw Knife that will draw.



If your hardware dealer does not keep it, we will send it to your address postage paid. : :

A. J. WILKINSON & CO., 180 to 188 Washington St.,
BOSTON, MASS.

"Last a Lifetime and Give Satisfaction To the End"

BUTT CHISEL

TRADE MARK

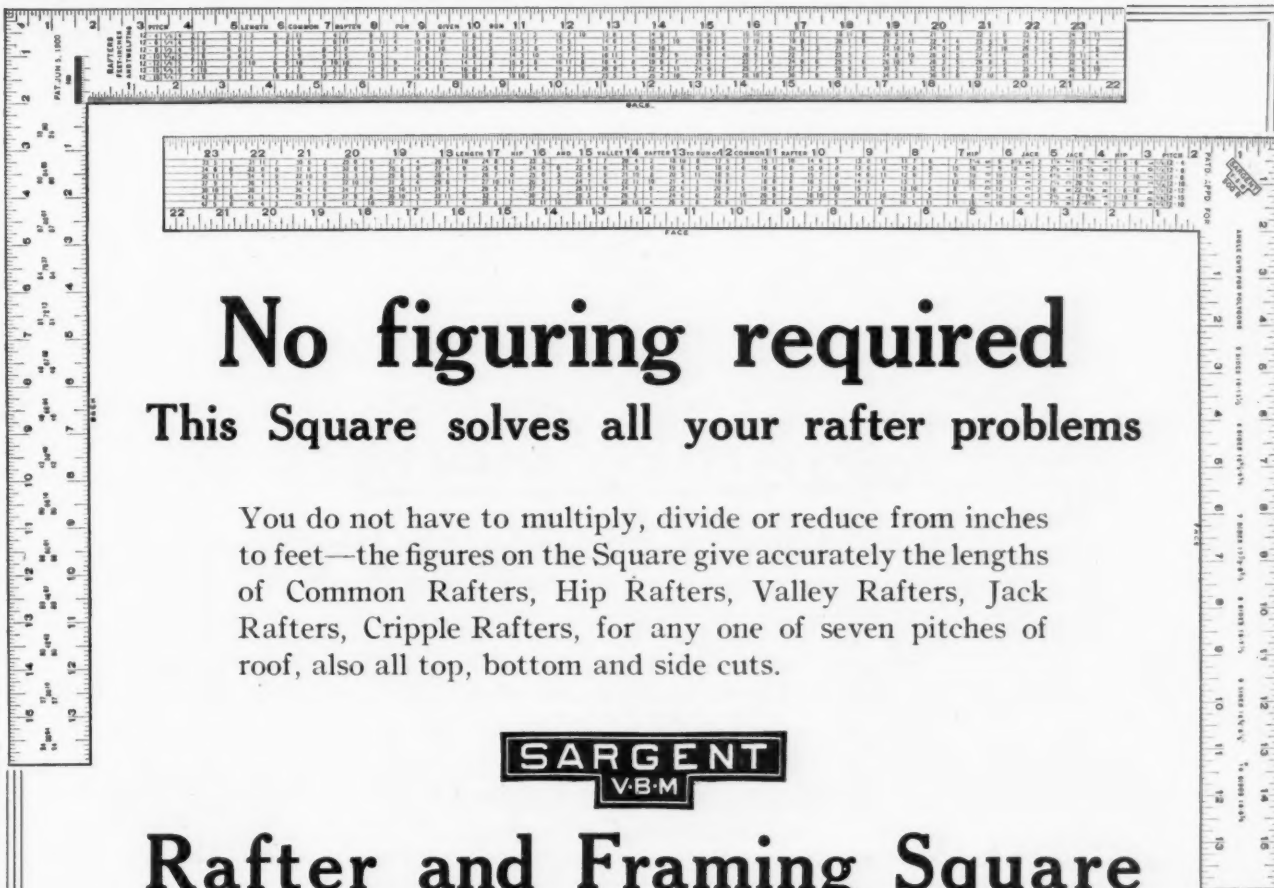
The celebrated Barton Planes and Edge Tools for carpenters and all other woodworkers are unequalled by any other made for keen, hard, smooth cutting edges. If your hardware dealer does not handle

THE CELEBRATED BARTON TOOLS

Send direct for catalogue and our free story book, True Stories.
Be sure to specify "CARPENTER'S CATALOGUE."

MACK & COMPANY, 20 BROWN'S RACE
ROCHESTER, N. Y.

When Writing Advertisers Please Mention the American Carpenter and Builder.



No figuring required

This Square solves all your rafter problems

You do not have to multiply, divide or reduce from inches to feet—the figures on the Square give accurately the lengths of Common Rafters, Hip Rafters, Valley Rafters, Jack Rafters, Cripple Rafters, for any one of seven pitches of roof, also all top, bottom and side cuts.

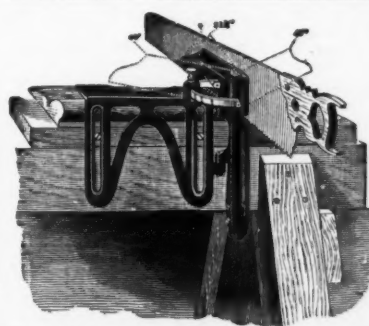
SARGENT
V.B.M.

Rafter and Framing Square

is an invaluable tool and time-saver for busy mechanics. Errors are avoided as there are no calculations to make and the figures on the Square are guaranteed to be accurate.

For full description see the Sargent Square Booklet, sent free on request. Other Sargent Quality Tools are described in the Sargent Tool Book, a hand-book for mechanics, sent on application.

SARGENT & COMPANY, Manufacturers, 1149 Leonard St., New York



Two "RED DEVIL" Specialties You Should Have

"RED DEVIL" Improved

MITRE BOX

IT'S THE ONLY MITRE BOX MADE

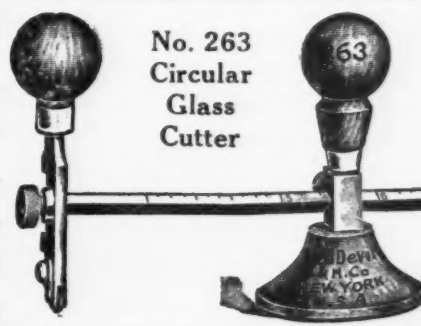
That will cut any angle with any saw, any place. Can be used anywhere in the shop or on the job. You want this "RED DEVIL" Mitre Box and no other. All good hardware dealers sell it. Just insist on the "RED DEVIL" Mitre Box and take no other. It's to your advantage to use it and do perfect work and save time. If you can't get it locally, send us \$2.00 and your dealer's name, and one sample only will be sent you prepaid.

SMITH & HEMENWAY CO.

Only Makers of Genuine "Red Devil" Tools.
Over 3,000 Different Kinds and Sizes.

"Red Devil" Circular Glass Cutter
No. 263—\$1.25

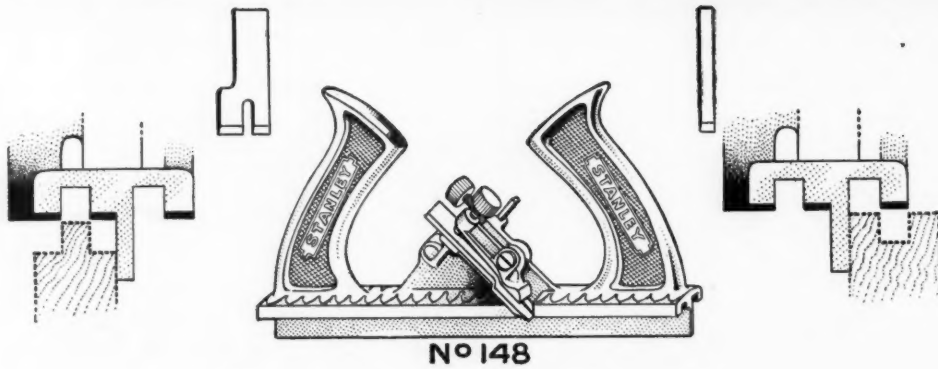
It's a perfect tool for cutting circles in any kind of glass. It will cut a 2" or a 22" circle absolutely accurate. IT'S A "RED DEVIL" GLASS CUTTER. Your hardware man has it. Get it from him, or one sample only will be sent you postpaid on receipt of \$1.25.



No. 263
Circular
Glass
Cutter

When Writing Advertisers Please Mention the American Carpenter and Builder.

150-152 Chambers St. - New York, U. S. A.
240 Lemoine St. - Montreal, Canada



No 148

Stanley Tools

Stanley Double End Match Planes

These Planes cut a tongue on the edge of one board to fit a groove in the edge of another board, so that when put together the surfaces of the boards come true. They have two separate cutters, a plow and a tonguing tool, both governed by one permanent fence.

Both tongue and groove are cut by working the tool in the same direction, by merely reversing it end for end. Nickel plated. Made in three sizes.

Send for descriptive circular.

STANDARD
THE WORLD
OVER

Stanley Rule & Level Co.
NEW BRITAIN, CONN. U.S.A.

EVERY
TOOL
GUARANTEED

50c FOR THIS Clamp Fixture

*It is Unequalled for Strength—
Quick Action and Last-
ing Qualities*

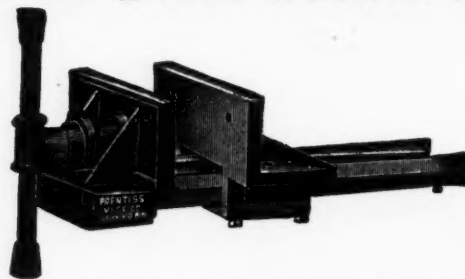


Write for Catalog of Sheldon's Clamps and Vises.

E. H. SHELDON & CO.

184 Nims Street :: MUSKOGON, MICH.

BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest

—Cheapest—Best

Send for Catalogue of all kinds of Vises

PRENTISS VISE COMPANY, MAKERS
106-110 La Fayette St., New York, U. S. A.

1810 THE JAMES SWAN COMPANY 1912

SEYMOUR, CONN.

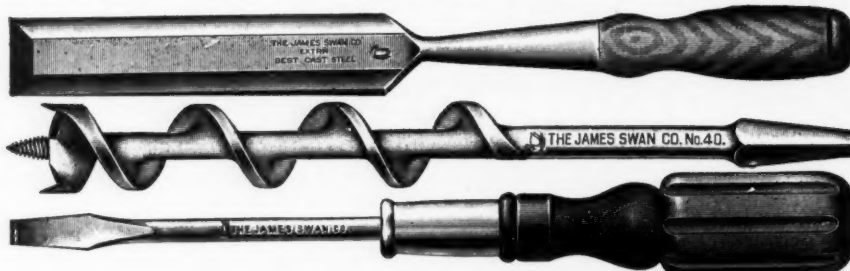
Manufacturers of

Mechanics' Tools, Augers, Auger Bits, Draw Knives, Chisels, Hollow Augers, Gimlets, Boring Machines, Gouges, Screw Drivers, etc.

Send for Catalogue



Inquiries Solicited



When looking
for quality buy
goods with the
"Swan" trade
mark.

When Writing Advertisers Please Mention the American Carpenter and Builder.



Take All Inside Measurements Quickly and Absolutely Accurately

You surely can, Carpenters, Builders and Architects, with this Master Slide Rule.

It is the one rule made that you can always use easily and accurately.

Inside measuring; outside measuring; boiler, furnace, wall, door, window measuring—in fact in anything that you have to measure you can use

THIS MASTER SLIDE RULE



This illustration shows a five foot Master Slide Rule with lower slide extended 2½ inches—making distance between the two extreme points of the rule 10½ inches as indicated by the arrow.

This rule is built strongly of selected boxwood and trimmed with brass plated steel. When extended, it is kept in place rigidly by strong steel springs. It can be opened or closed instantly. It is marked for inside measuring—also similar to other rules.

Why Don't You Buy One of These Rules

Costs but 15 cents per lineal foot for a 4, 5 or 6 foot rule. Send for one today SURE.

We will mail you circulars, particulars, our agency proposition, etc., etc., if you'll but send us your name and address. Let us hear from you today.

Dahl Manufacturing Company

Childs Bldg.—1 East 42nd St. New York City

PEARSON'S AUTOMATIC SHINGLE NAILER



Works well on any pitch roof. Gloves or mittens can be worn and nails driven faster than by the old way. Throw nails in by the handful—holds about 600 nails—start nailing. Nails can be driven through tin or quite heavy sheet iron.

PAYS ITS COST ON ONE JOB

Made in two sizes:
The **BLUE** Nailer for 3d common No. 14 gauge wire nails.
The **RED** Nailer for 3d galvanized No. 13 gauge 1½ inch wire nails.

Order through your dealer or sent prepaid for \$5.00.

Money refunded if not as represented
PEARSON MFG. CO.
Robbinsdale, Minn.

When Writing Advertisers Please Mention the American Carpenter and Builder.



FOURTEEN MACHINES IN ONE. 1—Fine Dimeo-Grit Wheel. 2—Coarse Dimeo-Grit Wheel. 3—Universal tool rest. 4—Chisel and plane bit guide. 5—Dimeo-Grit razor hone. 6—Dimeo-Grit scythe stone. 7—Dimeo-Grit saw summer. 8—Felt polishing wheel. 9—Medium Dimeo-Grit Wheel. 10—Cloth Buffing wheel. 11—Dimeo-Grit oil stone. 12—Dimeo-Grit pocket hone. 13M—Plane bit honing attachment. 14M—Twist drill sharpening attachment.

FREE TO YOU

Handy Tool Grinder—Makes Work Easy

I will send this shop tool grinding outfit to any reader of this magazine on 30 days' free trial. You can use it to your heart's content, put a sharp edge on all your tools, and then, if you do not wish to keep it, return it at the end of 30 days. No money required in advance.

LUTHER SHOP TOOL GRINDER

Dimeo-Grit Wheels

The wheels on this grinder are made of DIMO-GRIT, the new artificial diamond sharpening substance that cuts steel as emery does copper—just a light touch needed—no water cooling—no danger of drawing temper—25 times faster than the grindstone—10 times more efficient than emery.

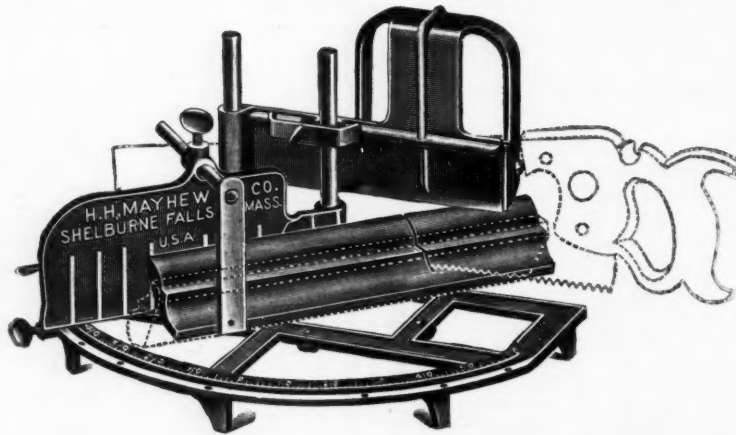
The Luther Grinder is equipped for engine and foot power—4,000 revolutions a minute by foot power—shaft drive like automobile—built all of steel—dust-proof bearings—runs easy as sewing machine. Tool rests and attachments enable anyone to do any hard grinding job as well as an expert.

30 DAYS FREE TRIAL

Write at once for 40-page free book which explains how to sharpen tools and tells all about the Luther Tool Grinder and the wonderful sharpening substance, DIMO-GRIT. Write now while you think of it.

Luther Grinder Mfg. Co., 1305 Michigan St. Milwaukee, Wis.

MAYHEW 60° MITRE BOX



This box embodies more distinctive features than any other made.

Designed for Simplicity, Accuracy, and Durability.

Strictly a right hand tool for mitering.

Box embodies a new feature in reversing the principle commonly used on other boxes.

Any of three saws may be used — Panel — Hand or Back saw.

Saw guide adjustable for any thickness of saw.

Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.

In mitering duplicate cuts there is no restriction on length.

Will cut compound mitre.

Parts take down into space 10x10x4 inches.

Weight 15 lbs. complete.

Box contains full directions for use.

PRICE EACH, \$10.00

H. H. MAYHEW COMPANY, SHELBURNE FALLS, MASS.

NOTE—Our Special brand Clamps, have notches on the bottom of the bar, instead of on the top.

Per pair, 1 foot.....	\$2 70
" 1 1/2 feet.....	2 85
" 2 ".....	3 00
" 2 1/2 ".....	3 75
" 3 ".....	4 00
" 4 ".....	4 50
" 5 ".....	5 00
" 6 " heavy.....	7 50
" 7 ".....	8 50
" 8 ".....	9 50
" 9 ".....	11 00
" 10 ".....	12 50
" 12 ".....	14 00

These clamps have steel bars and screws and malleable iron parts.

The New Adjustable and Perfection Clamps are made in the following lengths and sizes:

2 1/2, 3, 4 and 5 foot have 1 1/2 x 1/2 inch bars.
6, 7, 8, 9 and 10 foot have 1 1/2 x 1/2 inch bars.
Joiners' Clamps—1, 1 1/2, and 2 foot have hand-wheels for rapid work, 1 1/2 x 3-16 inch bars.

In ordering parts always make sketch, to avoid delay.

Hargrave's New Adjustable SPECIAL Clamp.



Hargrave's Perfection SPECIAL Clamp.



Hargrave's Joiners' SPECIAL Clamp.



Write for circular
Dept. H.

THE CINCINNATI TOOL CO.,

CINCINNATI, O.,
U. S. A.

1853



1912

Fine Beveled Edge
Shank and Socket

Chisels



Butt Chisels

Plain and Beveled Edges

Send for illustrated Catalog

Buck Brothers, Millbury, Mass.

CALDWELL SASH BALANCE



Does away with weights and cords, and VASTLY more durable.

Makes sashes work perfectly.

Permits greater window space in new work, as box frames are not necessary.

May be applied to old windows without altering sashes or frames.

Write for circular to the

Caldwell Mfg. Co.
15 Jones Street, Rochester, N. Y.

When Writing Advertisers Please Mention the American Carpenter and Builder.

GEO. H. BISHOP & CO., Lawrenceburg, Indiana, U.S. A.

Makers of

Fine Hand Made Hand Saws

The Purest of Quality Our
"GREYHOUND" Hand Saw



IN introducing our "GREYHOUND" brand of Saws to the trade, we have departed from our usual custom in naming instead of numbering the saw. This saw will be known as our "GREYHOUND" and will be the only Bishop brand of saw known by name.

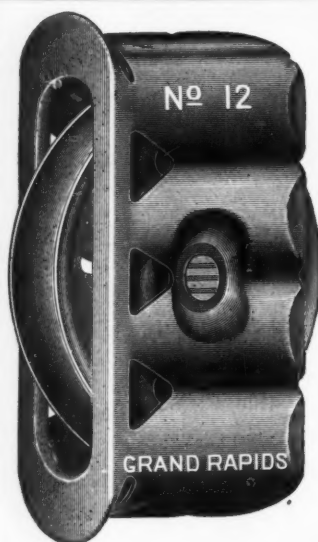
We have had a Chemist experimenting for years to originate a purity of steel with a fine grain and tough body that would stand up under such a fearless warranty as we place on our "GREYHOUND" brand of saws. We now have it. We know its worth as well as its value. As workers of steel we understand it. We had to name it and we have christened it Bishop's Refined "GREYHOUND" Steel, associating our trade mark with its name. We have in this "GREYHOUND" Saw blade a purity of steel that is tough, tempers accurately and even—together with the special way it is made—enables us to guarantee that this "GREYHOUND" brand of Saws will cut faster and run easier in all kinds of wood, hold its sharpness and set longer than any other makes of good Saws in the world. We Refund the Money if 30 days' trial does not prove our guarantee. Our pride is quality with an honest opportunity for the purchaser to judge. Each Saw is tagged with our warranty on it. No expense has been spared to make this Saw the most perfect in the world. We invite correspondence with anyone who has our "GREYHOUND" brand of saws in use.

Made in both straight and skew back. Packed One in a Box.

In workmanship this saw possesses all the skilled mechanical features known to the art of saw making. The hang of the blade has been carefully studied and adjusted, to suit the fancy of the most critical.

If this saw cannot be found in the Hardware Store and they will not order it for you, write to us. Price

Inches,	18	20	22	24	26	28	30	Packed one
Each,	\$2.35	\$2.50	\$2.65	\$2.80	\$3.00	\$3.30	\$3.65	in a Box



"GRAND RAPIDS" ALL STEEL SASH PULLEYS

No Nails No Screws
Just Bore 4 Holes

The time saved by the
"Grand Rapids" will
actually pay for the
pulleys.

You can't afford to use
old style pulleys.

Write for free samples
and prices.



Grand Rapids Hardware Co.
Manufacturers
158 11th Street, GRAND RAPIDS, MICH.

This fasten-
ing is more se-
cure than any
number of
screws or nails
could make it.
Saves about 15
per cent, too.
SCREWS
COST MONEY

Only Line Holding Pencils Any Length and Various Shapes



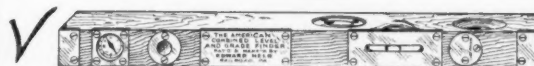
Peerless 3 1/4-inch Scriber. Pat'd. Broad point for plaster walls, fine woodwork, etc. Sharp point for quirks and moldings. Adapted for extra close scribing. Steel points can be moved up or down to suit pencil. No. 30, Polished Steel, 30c. No. 35, Nickel-plated, 35c. Also made in 5 1/4 size (No. 57.) This size is furnished with steel point, which can be inserted in place of pencil, if desired. No. 57, Nickel-plated, 60c. Peerless Flexible Bit Gauge (No. 100.) A time saver for mortise locks. Nickel-plated, 30c, postpaid. All goods fully warranted. Special rates to jobbers and dealers. Order tools by number. U. S. stamps accepted. Cut shows Peerless scriber, one of our Ten Specialties. We also make the celebrated line of Star scribers. Write for Star circular. POTTER BROS., 612 W. 110 St., NEW YORK

The American Combined Level and Grade Finder

SIDE VIEW



TOP VIEW



WITH COMPASS

All progressive and up-to-date Carpenters, Contractors and Mechanics are getting one of our levels and grade finders.

An instrument with which at one glance you can get the true slant on any line or grade, either in degrees, inches or percentage, or all at one time, and will at once give the exact distance needed to plumb up to a true level.

The longitudinal recess shown in cut is well worth the low price of the instrument. Note the additional level glass, now placed in middle of instrument, giving with pointer or hand on dial three guides for leveling. The most practicable, durable and convenient instrument of the day.

Write at once for large list of testimonials and special introductory price given only to first applicants with privilege of taking agency.

American Level & Grade Finder Co., Box 255, RAILROAD, PA.

When Writing Advertisers Please Mention the American Carpenter and Builder.

DISSTON
*Quality
Sells*

The mechanic using

**DISSTON SAWS
TOOLS and FILES**

obtains those full and satisfying
results which make him an earnest
advocate of the

DISSTON BRAND

HENRY DISSTON & SONS
Incorporated

Keystone Saw, Tool, Steel and File Works
PHILADELPHIA

Established 1840



Send us two or more names of persons who are interested in or want to buy Hot Water Heating Plants and we will send you this scale. Back inches are divided into 6, 10, 12, 16, 20 and 40 parts. Also free catalog on request. Mention this paper.

Andrews Heating Co., 1288 Heating Bldg., Minneapolis, Minn.

"A Bit of Utility"

Guided by its circular rim—instead of its centre—the Forstner Labor-Saving Auger Bit will bore any arc of a circle, and can be guided in any direction.

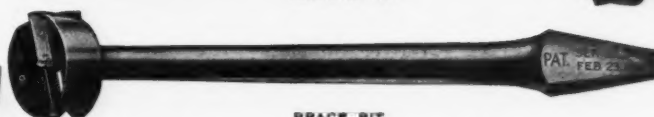
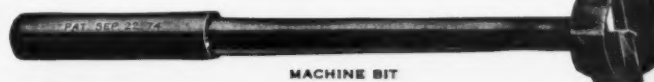
Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

Unequaled for Delicate Work

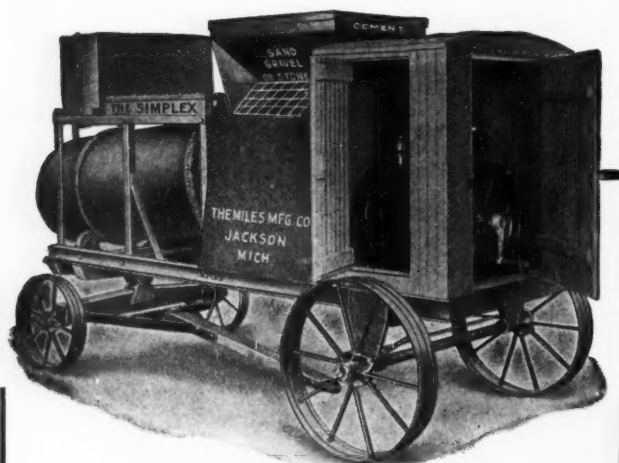
Supersedes chisels, gauges, scroll-saws, or lath tools combined, for all kinds of delicate work. Cabinet and pattern makers and carpenters are enthusiastic because they do more work than other bits and cost no more.

We can offer something special in the matter of price on sets packed in a sensible box. Send today for particulars and catalog.

The Progressive Mfg. Co.
Torrington, Conn.



When Writing Advertisers Please Mention the American Carpenter and Builder.



THE SIMPLEX IMPROVED MIXER 1912 MODEL



3-Hoppers, Continuous feed
Rolling Mix, Low down Steel
frame. Simple Strong and
Accurate.

"The Miles" No. 5, Down Face, Wet Concrete Block Machine

Makes Stone in Lengths, 4",
6", 8", 10", 12", 16", 18", 20",
22", 24"; in Width, 4", 6",
8", 10", 12"; in Height, 4", 6",
8". Also Angle Stone, Circle
Stone, Gable Stone, Hollow
or Solid Stone.
The Contractor's Friend, Sim-
ple, Strong and Rapid.
Lowest in price.

WRITE FOR NEW 1911
CATALOGUE

THE MILES MFG. CO., Inc. 309 E. Franklin St.
JACKSON, MICHIGAN



The Simple, Little, Light, Handy and Substantial

NORTHFIELD MIXER

will save you big money on every job. Conservative
Capacity: 90 Cu. Yds. per day. It can always be set
to discharge direct into Forms, cutting out one-half the
wheelers. It saves you three-fourths the Transportation
charges and all repair bills, as compared with any
other mixer.

No man's business is so big, nor no job so small but
what it will pay to have this little Money, Time and
Worry Saver on the Work.

New Principle: Plows, Hoes, Stirs, Mixes Mortar, Plaster,
or Concrete. Insures a thorough mixture under all conditions.
The only satisfactory color blending machine.

IS NOT A MAN-KILLER

Operates by either Engine, Motor or Hand Power. Most
reasonable priced good mixer on the market.

Sold on trial. Satisfaction Guaranteed.

Write at once for FREE Catalogue, Price and Terms.

Manufactured by

NORTHFIELD IRON COMPANY

402 Water Street : : Northfield, Minn.



Dog House of Blocks
made with the \$3.00
Simpson Junior Outfit.

Get your boy one of these outfits. They only cost \$3.00 prepaid. The
practical knowledge he will get from making blocks will be worth hundreds
of times that amount. Besides he can make and sell cement articles and soon
get the cost price back. Don't overlook your boy. Help him to help himself.

Let us send you our detailed descriptive folders explaining the SIMPSON
Junior fully and just how much good your boy can get from it.

The Simpson Cement Mold Co., 121 Vine St., Columbus, Ohio

YOUR BOY

What does he do with his spare moments—his
play time—his vacation time? Why not let him
make practical, educational—as well as—playful
use of this time?

Get him a SIMPSON Junior Cement Block
Making Outfit and he will make his play time
profitable, both to himself and to you. He will
learn, in a practical first hand manner, of the
wonderful modern building material—CEMENT.
He will make—plan and build—many practically
useful, though small, structures—such as models
of buildings and houses; a miniature city; a real
workshop for himself; a chicken coop; a dog
kennel; a house for cats; rabbits, pigeons or other
pets; walls to protect flower beds; boxes for
garbage cans; mantel fronts; etc. etc.

A sack of Portland Cement costs very little—
sand is cheap. And that is all that is needed to
make blocks on our Junior Block machine. This
Junior machine produces the small blocks per-
fectly. It is equipped to make blocks of different
sizes and faces.



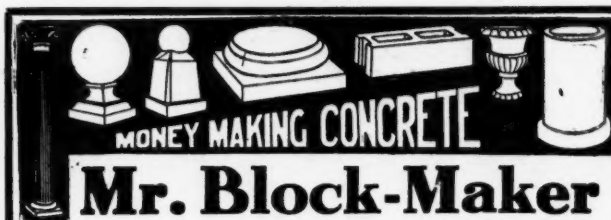
SASGEN REINFORCED
CIRCLE SWING DERRICK
\$45.00 complete ready
for use with
geared winch, 150
ft. cable and block.
2500 lbs.
Capacity.

LIGHT STRONG STIFF-LEG DERRICK

All crucible steel
fittings with split
mast and boom.

SASGEN BROS.

2053-57 Racine Ave. CHICAGO, ILL.
NEW YORK OFFICE, 103 Park Ave.
Write for Illustrated Catalog No. 2.



Mr. Block-Maker

Wet Process is Right.
Face down is Right.
Three blocks at a time is Right.
Triple Tying is Right.
Damp Curing is Right.

The Mogul Invincible Block Machine

COMBINES ALL THESE

IT IS RIGHT

It is 46 inches long and will make three 16" or two 24"
blocks at one operation. It makes sills, caps, copings,
ralls and steps, faster and better than a special sill
machine. It has every adjustment that any other ma-
chine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

WRITE FOR CATALOG

THE PETTYJOHN COMPANY

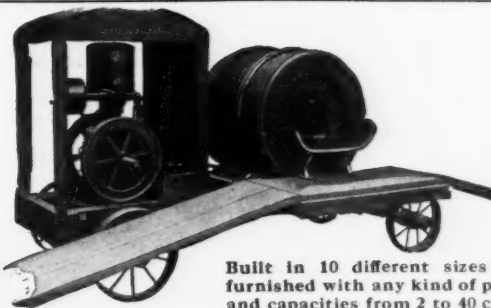
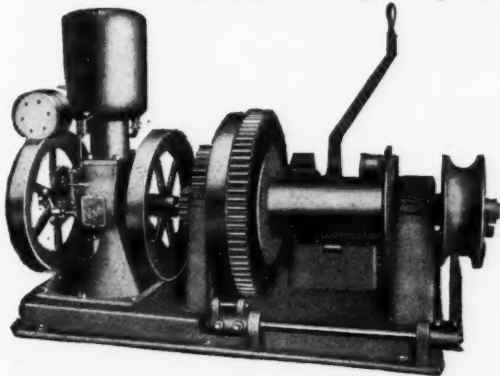
634 No. 6th St., TERRE HAUTE, IND.

When Writing Advertisers Please Mention the American Carpenter and Builder.

"The Standard" Low Charging Mixer for Rush Jobs and Every Job

The Low Charging platform, which is only 2 in. high and is portable with the mixer, has many advantages over either the side loaders or high charging platforms.

The Semi-Automatic discharge is operated from either side of the drum and is the simplest and quickest discharge on the market.



Built in 10 different sizes and furnished with any kind of power and capacities from 2 to 40 cu. ft. per batch.

The Open Drum allows the inspection of entire batch while mixing, assuring a uniform high grade of concrete.

The Low First cost and Low Operating cost makes "The Standard" a big profit builder.

"The Standard" Hoisting equipment is especially adapted for building work and contractors' use.

We build big machines for big contracts and little machines for small contracts.

Better write for our catalog No. 144.

The Standard Scale & Supply Company

CHICAGO
1345-1347 Wabash Ave.

PITTSBURGH
243-245 Water St.

PHILADELPHIA
35 So. Fourth St.

NEW YORK
136 W. Broadway

Lay Your Own Concrete

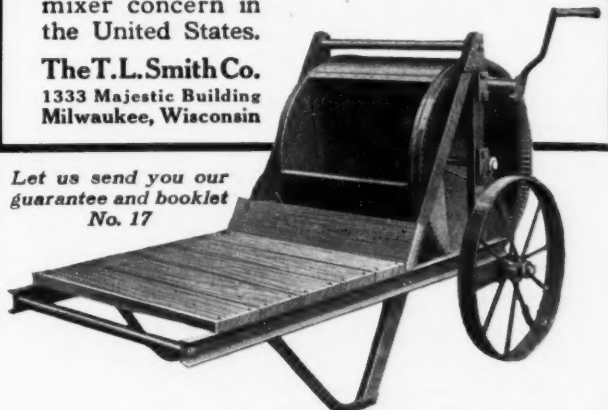
AS the forests are cut, builders turn to concrete. Concrete construction is not difficult. It pays liberal profits. Hundreds of contractors are going into concrete every year. You can start with a small investment—some wheelbarrows, shovels, small tools and a

Smith Hand Mixer

IT is a *batch mixer*, guaranteed to mix a perfect batch in three slow, easy turns of the drum. Cranks easily—popular with the men. Batch capacity, $2\frac{1}{2}$ cu. ft. Output, 25 to 30 cu. yards per day. Weight, 1000 lbs. Guaranteed fully by the biggest and oldest mixer concern in the United States.

The T. L. Smith Co.
1333 Majestic Building
Milwaukee, Wisconsin

Let us send you our
guarantee and booklet
No. 17



Why Not The BLYSTONE Batch Mixer?

This Blystone Batch Mixer can mix mortar and plaster just as well as it can mix concrete. It will give a perfect and thorough mix regardless of material used.

The Blystone Mixer operates very easily. It is filled while in motion and material is discharged while machine is in motion. The Blystone Mixer mixes material in full view—this insures an absolutely accurate mix.

The Blystone Mixer is durable—it is simple in construction and well built throughout. It can be easily cleaned.

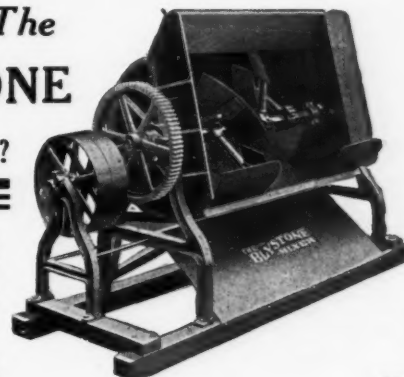
The reverse spiral paddle system of the Blystone mixes rapidly, turning material over forty times in one minute.

Blystone Mixers are furnished with gasoline engine, power equipment or for belt driving. Mounted on skids or portable hand trucks.

USE THE BLYSTONE MIXERS—BUILDERS

The Blystone is the practical mixer for your use. It is thoroughly adaptable to just the sort of work you want a mixer for.

Let us tell you fully about the Blystone. Get our catalogue and circular matter. Write today for full particulars.



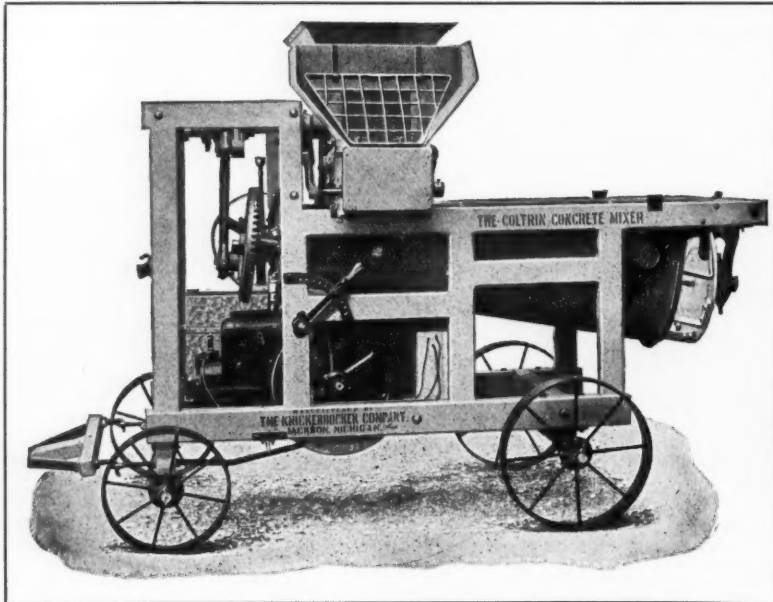
THE BLYSTONE MACHINERY CO.
19 Carpenter St., CAMBRIDGE SPRINGS, PA.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The Coltrin Continuous-Batch Mixer No. 8

WITH AUTOMATIC MEASURING FEED

SHIPPED ANYWHERE ON TRIAL



Housing Removed to Show Drive

CAPACITY:

Five Cubic Yards Per Hour.

POWER:

2½ H. P. Gasoline Engine.

LENGTH:

8 ft. 4 in. Over All.

WHEELS:

18 and 20 Inch Diameter.

WEIGHT:

1800 Pounds.

And Do Not Forget

that the Coltrin's first claim to superiority is that it works on an **entirely different principle** from any other continuous mixer and produces **more uniform** and **better** concrete than any batch mixer in existence.

WRITE FOR CATALOG

The Knickerbocker Company

::

Jackson, Michigan



Making ready to insert the floor beams.

Van Guilder Hollow Wall Concrete Machine— Continuous Air Chamber from Cellar to Roof

Steel Reinforced Throughout

DONT WASTE YOUR MONEY

The labor employed for making building material, such as blocks, brick, tile, etc., we utilize to erect the building. Completely revolutionizing building methods.

Our Walls are Stronger

being double and monolithic from footing to roof plate, with a continuous air space everywhere between—a house within a house. The walls are tied together, also steel reinforced horizontally every 9" high.

Our Buildings are Warmer in Winter, Cooler in Summer

Damp proof Frost proof Fire proof Vermin proof No Maintenance
Everlasting Cost Less Sell Higher Exterior finished up-to-date Italian Stucco

Our Silo Machines

build the best silo walls in the world. Continuous air space. No freezing of ensilage. No vermin. No repairs. Stand forever.

Cold Storage Machine

Makes 3 walls and 2 continuous air chambers at one time. For cold storage, fruit and vegetable storehouses.
Send for Illustrated Folders.

VAN GUILDER HOLLOW WALL COMPANY 720 CHAMBER OF COMMERCE
BLOG., ROCHESTER, N. Y.

PEERLESS Cement Brick Machine

Big money is being made in the production of Cement Brick. Thousands of carpenter-contractors have already entered this field. Equip yourself NOW with THE PEERLESS—the original hand power brick machine with automatic Tampers.

Makes Brick Face-down and delivers them Face-up. One man operation.

Large variety of face plates with machine.

Learn all about the Cement Brick business. It pays others. It will pay you. One booklet will tell you more about it. Write for it NOW.



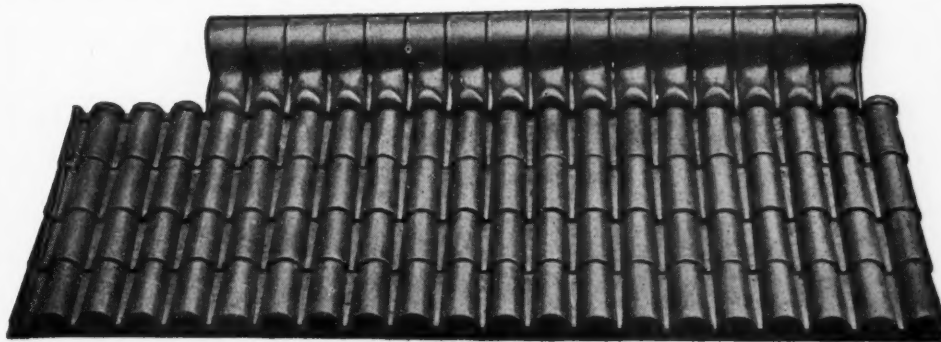
PEERLESS BRICK MACHINE CO.
19 North Sixth Street MINNEAPOLIS, MINN.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Mullins Metal Tile Roofing

has won widespread and lasting favor because of its many superior qualities. Beauty, simplicity, durability—these are its salient characteristics. Absolutely storm-proof and water tight.

When put on according to directions, Mullins Metal Tile Roofing is guaranteed to keep in perfect condition for years. No other roofing can equal it for all-round satisfaction. Many of the finest buildings in this country are equipped with it.



We also make
Cornices, Building
Fronts, Finials,
Tympanum panels,
Rosettes, Faces and
other architectural
ornaments. Many
thousands of de-
signs to select from.

Ours is the
largest and best
equipped factory of
its kind in the
world. We use

only the finest materials. Every artisan in our employ is a masterhand. Our prices are attractive, our services prompt. Glad to submit quick estimates on special jobs.

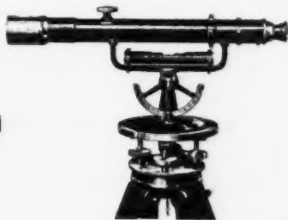
Catalogue along any desired line will be sent you by return mail.

The W. H. Mullins Co.

214 Franklin St.

SALEM, O.

The Yankee Compound Level



A reliable instrument for simple leveling and laying off horizontal and vertical angles. Can be handled speedily and easily.

The Yankee is particularly adapted for Architects, Builders and Contractors. use.

The Yankee is made of high grade materials throughout. All complicated and costly unnecessary features have been eliminated.

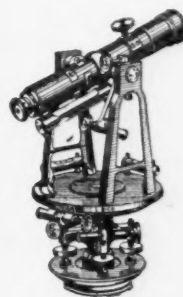
The Yankee is not an experiment. Yankees are in extensive use. They are giving thoroughly satisfactory service in every way.

The Yankee is the BEST moderate cost instrument made. It is light and simple. The vernier on a circular plate saves the circle from springing elliptical in case the instrument falls. It is the only instrument where the plate levels are saved by quickly employing the telescope level.

Before you buy any level write us for complete particulars concerning the Yankee Compound Level. Let us send you this information right NOW.

FROST & ADAMS CO., - 31 Cornhill, - BOSTON, MASS.

Are You Satisfied With Your Work?



If not use a **Beckmann** Level and you will have **Satisfaction** as well as **Confidence** in your work.

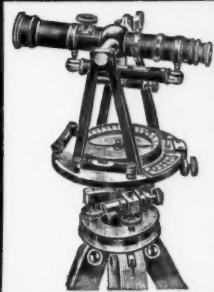
Send for Circular Y for full particulars

The L. Beckmann Co.

500 Adams Street

TOLEDO - - OHIO

Established 1874

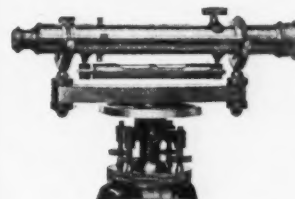


Why Carry A Heavy Transit?

Architects, Contractors, and Builders, this is the serviceable instrument for you. A portable transit that is of special light design. It is easily carried and handled. Is thoroughly accurate and especially adapted for fast work. Built upon practical substantial lines. We manufacture a complete line of surveying instruments in various sizes and at a wide range of prices.

All instruments guaranteed by us. Our circular No. 27 will explain our instruments to you in detail. It will pay you to get it before deciding upon any surveying instruments.

KOLESCH & COMPANY, 138 Fulton Street, NEW YORK
Surveying Instrument Makers. Established 1885.



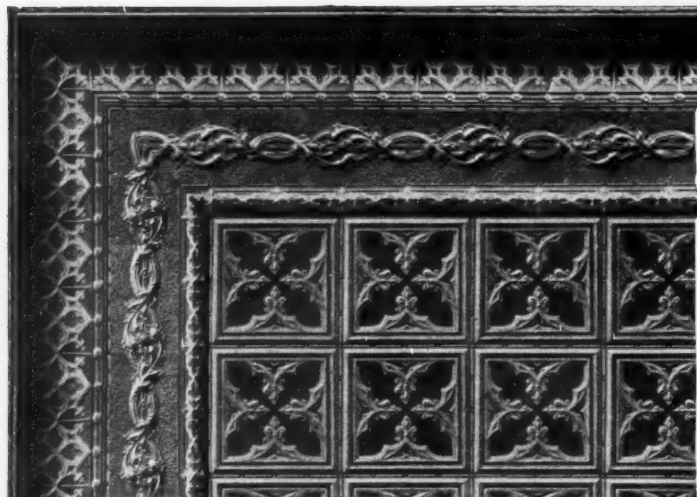
Over 3000 in Use
There's a Reason
White's
Improved Level

is guaranteed to give satisfaction or money back. Ask for catalog and special price—Ask today.

DAVID WHITE CO.

419 E. Water St., Dept. C, Milwaukee, Wis.

When Writing Advertisers Please Mention the American Carpenter and Builder.



Edwards Metal Ceilings and Walls

Carpenters Contractors and Builders

Here is a chance for you to build up an independent, profitable business for yourself right at home. Many agents are now devoting their entire time to selling our Metal Ceilings. Others have made big profits simply devoting part of their time to selling and applying our Metal Ceilings and Walls. *Write us to-day about your territory.* Our business is growing so rapidly that it is necessary to have an agent in every community. The territory is going fast. One day's delay may mean that some one else will be given your territory. *Don't delay. Write today for our special agents' proposition and large handsome catalog of attractive designs.*

The Edwards Manufacturing Company, "The Sheet Metal Folks"

401-417 Eggleston Avenue, Cincinnati, Ohio

Largest Manufacturers of Metal Ceilings, Metal Shingles, Steel Roofing and Siding in the World

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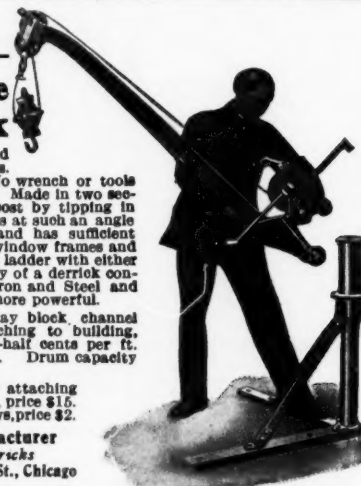
Taylor Portable Steel Derrick

Tested at factory, is hoisted and swung a complete circle 1800 lbs. Shipped ready to operate. No wrench or tools required to set derrick on job. Made in two sections. Beam section connects post by tipping in a vertical position and projects at such an angle to clear side wall of building and has sufficient height to hoist wheel-barrows, window frames and timbers. One man can climb a ladder with either section. Consider the durability of a derrick constructed entirely of malleable iron and steel and that of wood, more compact, more powerful. Derrick complete with three way block, channel steel brackets, bolts for attaching to building, price \$40.00, and four and one-half cents per ft. for crucible steel cable attached. Drum capacity 300 ft.

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Price includes our "Queen" Coal Grate with best quality enameled tile for facing and hearth. Gas Grate \$2.50 extra. Mantel is 82 inches high, 5 feet wide. Furnished with round or square columns, as shown in cut. Dealer's price not less than \$40.00.

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"Reputation and Quality Count"

Central Mantels

are distinctive in workmanship, finish and style. Twenty-five years' experience enable us to know and satisfy the needs of those who want mantels of quality, different from the rest. We build all styles—Colonial to Mission.

CATALOGUE FREE—Will send our 100 page catalogue, the finest ever issued, free, to carpenters, builders and those building a home.

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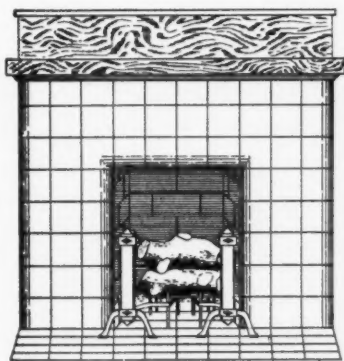
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HESS MEDICINE SANITARY LOCKER



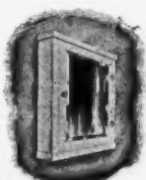
The Only Modern, Sanitary STEEL Medicine Cabinet

or locker, finished in snow-white, baked everlasting enamel, inside and out. Beautiful beveled mirror door. Nickel plate brass trimmings. Steel or glass shelves.

Costs Less Than Wood

Never warps, shrinks nor swells. Dust and vermin proof, easily cleaned.

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Makers of Steel Furnaces Free Booklet The Outside Street Cabinet

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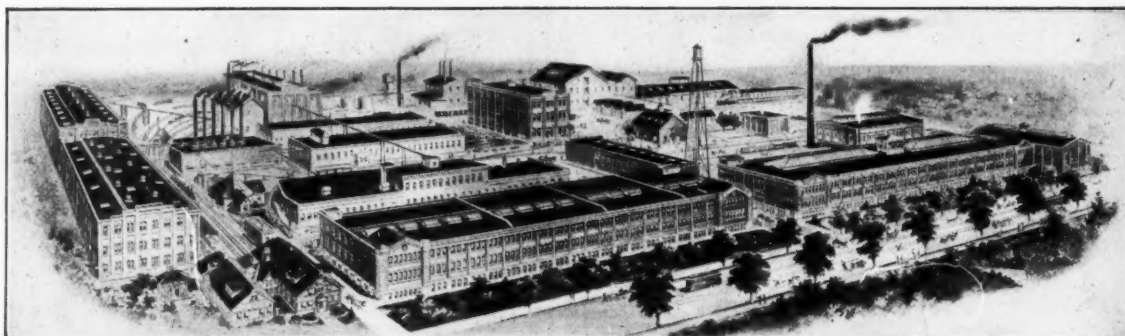
For interior and exterior purposes in public and private buildings.

Send your plans and receive promptly our estimate and designs.

Write for free catalog of Hardwood, Brick and Tile Mantels, Fire-place Fixtures, etc.

Heitland Grate & Mantel Co. 121½ N. Fifth St. Quincy, Ill.

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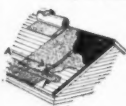
One of the Carey Factories at Lockland, Cincinnati, where 200 Carey Building Products are made.

Carey Guaranteed Building Materials for Service

WHEN all has been said regarding the excellence of material, of workmanship and other important factors in the manufacturing of building products, the final analysis brings the question—*Will these particular products give good service?*

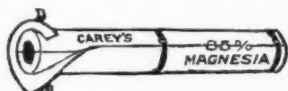
The workmanship and materials in the Carey products are guaranteed—and the service has been proved. We can refer you to a user in your section, who is getting good service.

Carey Flexible Cement Roofing



The Carey Patent Lap (A) is an exclusive and final protection to this permanent roofing—it covers the joints.

15 and 20 year old Carey Roofs can be investigated in any section of the country. They will be found live roofs today—good for many years more.



Protective Asbestos Materials

Carey Asbestos Coverings are absolutely fire-proof and thorough non-conductors of heat. They efficiently confine the heat to the pipes, preventing its loss through radiation, and preventing the condensation of steam. A few months' use saves their cost.



Paints and Oils

There is a Carey Paint particularly adapted to every kind of exposed surface. These paints are made to stand the hardest kind of weather exposure—and they do it economically. *Magnesia Paint* is an excellent preserver of absorbent surfaces—*Asphalt Paint* of metal surfaces.



Carey Cell-Board

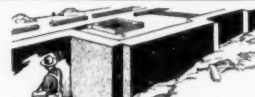
—is a decided improvement over lath and plaster, costing less money and having many additional advantages.

Carey Cell-Board offers a superior finishing material for walls and ceilings; is excellent for sound-proofing and damp-proofing between floors, and for lining out-buildings of every class.



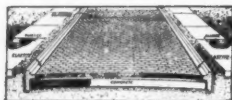
Asbestos Packings

Carey Packings are the results of constant experimenting. Every type is a tried and approved form that will give real and efficient service. The line includes the best packings for high pressure and super-heated steam service on Locomotives, High Pressure and High Speed Engines, Steam Ends of Pumps.



Percoproof—Damp Proofing

Waterproofing of walls, floors, etc., is a preserving treatment which should be included in every building constructed. Percoproof, and other Carey Damp Proofings meeting specific requirements, are of perfect efficiency in this treatment, keeping out the dampness and giving a dry, permanent building.



Elastite Paving Joint

—saves time and labor in the construction of brick, concrete and wood-block streets and concrete sidewalks—and makes a far better job than is possible with the old time pitch expansion joint.

Elastite equalizes expansion strains and absolutely prevents bulging or buckling.



Protectorap—A Waterproof Wrapping

Protectorap is used extensively for wrapping all kinds of merchandise, including furniture, refrigerators, machinery, cotton, woolen and linen goods, and novelties—both for local and export shipment. It is the strongest and cleanest of wrapping materials, being made of new burlap and strong genuine kraft paper thoroughly cemented together with a stainless asphalt waterproofing cement.



Sheathing—Insulating—Sound Deadening

Proper sheathing and insulating of the roof and side walls improve your building especially from an economical standpoint. It saves considerable fuel cost by the exclusion of cold and the retention of heat—in factories, office buildings and private dwellings. *Linofelt* is of particular efficiency.

These building materials are worthy of the investigation of every architect, Contractor, Building Owner and all interested in building. We urge you to acquaint yourself with the many products of proved value, made by this Company. The products featured above represent only a part of the line. Let us send you a descriptive catalog of the goods that particularly interest you. Write us today.

THE PHILIP CAREY COMPANY

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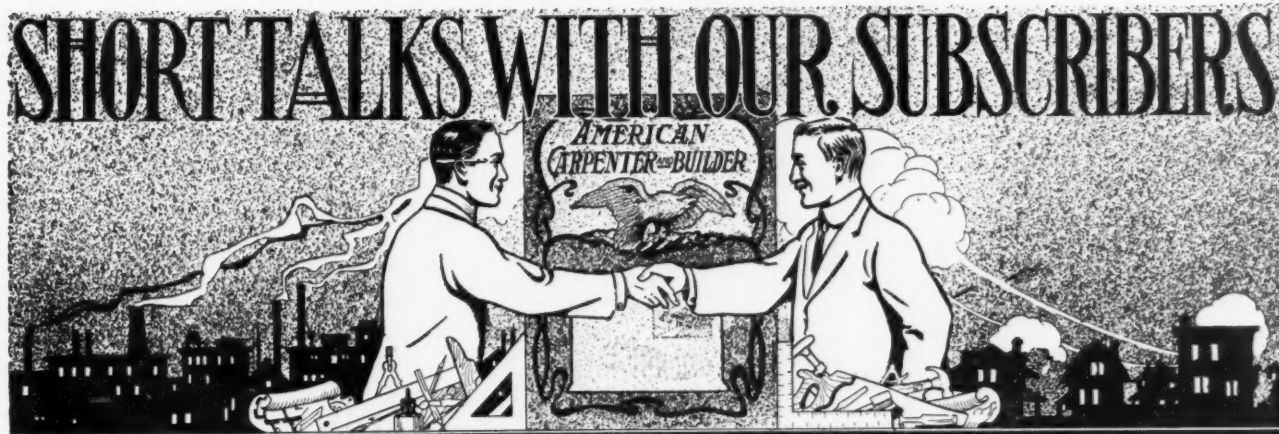
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When Writing Advertisers Please Mention the American Carpenter and Builder.



Big Harvest—Good Times

AS the crops are harvested they prove to be, almost every one of them, the biggest in the history of this country. Wheat, corn, hay, cotton, potatoes and fruit, all are surpassing previous high records. Good times are coming, prosperity is here.

For the carpenter and builder this means business. If there is any farmer who does not want rebuilding done either this fall or next spring, it is because his house and barns have already been remodeled and enlarged. And not only with the farmers, but for everyone else in this country, *big crops mean prosperous times*. Old houses will be repaired and remodeled; and new residences will be built in every village, town and city this season and next.

Get Under Cover

THE cold winds are blowing and the white snow will soon be drifting down. In the next three or four weeks get as many buildings started and under cover as possible. Rush the foundations in and get the framework up and roof on. Tack pieces of muslin over the window frames; and you will be ready for cold, bad weather. You can then take your time to finishing up all your contracts, and keep a nice line of work going all through the winter until spring.

As our friends, the Germans, say, "How do you find yourself" in cold, stormy weather?

Ever Laid Off in the Winter?

IF the carpenter and builder can have steady work, income producing work, right through the winter he has a pretty soft snap of it. His earnings are large during the busy season, and he ought to be able to keep something going through the winter—

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for the sake of his bank account and his self respect.

A good many carpenters and builders have met this problem in seasons past and have mastered it. They have learned what to do when their ordinary run of building work freezes up.

There are hundreds of ways a man, skilled in the use of tools, can keep the dollars coming in. There are dozens of "side lines" that any industrious man can develop and work to good profit.

The November AMERICAN CARPENTER AND BUILDER will tell all about these ways, which have been tried and tested, by which carpenters and builders can keep the dollars coming in during the winter months.

Workable Ideas Worth Money to You

DON'T overlook the November issue. If your earnings are not what they ought to be, the practical helps and suggestions will tell you how to increase them.

Or perhaps you have already met this problem and have solved it to your satisfaction. In this case won't you write down briefly your experiences and advice, and send to us for the benefit of some other builders who have not been so fortunate.

See page 51 for further particulars about this and write to-day.

Thanks, We Are Glad to Assist

EVERY little while our rocky, thorn strewn path is brightened by receiving a letter like the following:

Ithaca, N. Y., Sept. 19, 1912.

Editor AMERICAN CARPENTER AND BUILDER,

Yours of the 16th with information, relating to the — window which you so kindly gave me, is duly received. Thanks for the same and also for the trouble you have been to in asking the — Company to send me the desired information. I think the AMERICAN CARPENTER AND BUILDER is the best and most liberal building publication in existence, as no pains or expense are spared to obtain any information beneficial to its subscribers.

(Signed) CHAS. GRAY.

To be able to really serve nearly 40,000 wide-awake, reliable carpenters, contractors and builders makes us very glad. Fraternally yours,

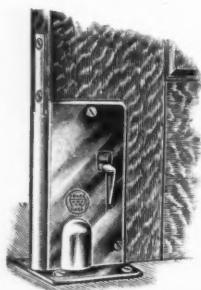
Editor AMERICAN CARPENTER AND BUILDER.

CHICAGO

SPRING BUTTS

REPUTATION

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



Chicago "Relax" Spring Hinges

are in great demand. They are substantial in construction and readily applied. The EXCLUSIVE FEATURE of spring action release, allowing the door to be placed at any desired position and automatically re-engaging when the door is closed, is of recognized merit and utility.

Send for Catalogue C 26. It fully illustrates and describes the most complete line of Spring Hinges manufactured.

Chicago Spring Butt Company

CHICAGO



NEW YORK

BOMMER

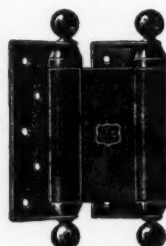
SPRING HINGES

ARE

Quality Goods

BUT COST NO MORE THAN THE SUBSTITUTES

This trade mark



Reg. U. S. Pat. Office

on every genuine Bommer Hinge



Durable—Neat—Reliable

BOMMER SPRING HINGES

ARE THE BEST

Bommer Bros., Mfrs., Brooklyn, N. Y.

Properly Set Your Saw

There is very little difference in the appearance of Saw Sets. They vary greatly, however, in the quality and mechanical construction.

There is only one Saw Set that is perfect in construction and that is absolutely guaranteed to set a saw properly.

The Morrill Saw Set

manufactured by Chas. Morrill for thirty years is the only Saw Set that can be used with the assurance that it will set a saw properly.

Our booklet No. 9, "Saw Points," that gives information about the care of saws, sent free on request.

CHAS. MORRILL

275 Broadway

NEW YORK



Make Your Buildings Frost-Proof

BY LINING THEM WITH

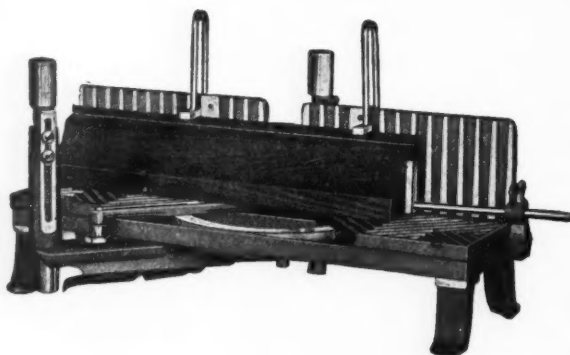
Cabot's Sheathing "Quilt"

Lined with Cabot's Sheathing "Quilt" Shepley, Rutan & Coolidge, Arch'ts Chicago.

"Quilt" is not like common building papers. It is a matted lining full of dead air spaces and keeps out the cold in the same way that a bird's feathers do. It is forty times warmer (or cooler in summer) than the common cheap papers. It costs about 1 cent a foot and will pay for itself over and over again in saving fuel, and in protecting stock, poultry or stored fruit, and you and your family from discomfort and doctor's bills. Send for free samples and name of nearest agent.

SAMUEL CABOT, Inc., Boston, Mass.

350 Dearborn Ave., Chicago 1133 Broadway, New York
Also Cabot's Creosote Shingle Stains, Waterproof Cement and Brick Stains. Conserve Wood Preservative.



Marsh Ayer Miter Box

Ranks highest in quality and improvements. **Length Gauges** for duplicate lengths, **Stock Gauges** for holding crown moulding or irregular shaped pieces are only two of its many superior features.

Send for illustrated circular and learn all about it.

H. C. MARSH CO.

606 RACE ST.

ROCKFORD, ILL.

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The
**World's Greatest
Building Paper**

Important Notice

When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before October 25 to avoid missing the November number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.

The
**World's Greatest
Building Paper**

American Carpenter and Builder

Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill. under the act of Congress of March 3, 1879.

Published on the first day of each month by
AMERICAN CARPENTER AND BUILDER COMPANY
178 W. JACKSON BOULEVARD, CHICAGO

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VOL. XIV. OCTOBER, 1912. No. 1

SUBSCRIPTION RATES

One Year, \$2.00; six months, \$1.00; payable always in advance. Single Copies, 20 cents. Canadian Subscriptions, \$2.50. Foreign Subscriptions, \$3.00.

ADVERTISING RATES

Furnished on application. Advertisements, to insure insertion should reach our Chicago office not later than the 20th of the month preceding date of publication.

267 Co-partners 267

THE other day we were talking with a carpenter and builder from down the State. Smallish town; no architect; hardware man doing a little furnace business; lumber man musty and behind the times; but the people in the town and surrounding country prosperous and wanting their building done *right* when done,—wide awake to modern improvements too, that is to appreciate and want a good thing when put up to them.

In fact, the building situation seems to be pretty much in the hands of our friend, to guide according to his knowledge and experience, his likes and dislikes.

In talking over the building situation there, he said: "I don't know how I could get along without the AMERICAN CARPENTER AND BUILDER, especially the advertising pages. They are about the only way we have down there of keeping track of what's going on. Our people like to know about the new things, and like to try them out in their own way; but without the AMERICAN CARPENTER AND

BUILDER to keep us posted we might almost be building log houses yet.

"I wouldn't take a good deal for the ideas I have picked up through studying your advertising pages. Do you think the carpenters and builders in most places read the ads. and keep up to date as much as they ought to?"

"Probably not," we replied. "Some are like you, and then again some aren't."

"Well, if they knew the money there is in it for them—good business, profits, prestige and all that, they wouldn't be hanging back long." Write and tell them so."

267

GO through the advertising section of the AMERICAN CARPENTER AND BUILDER this month. You will find 267 enterprising, dependable manufacturing concerns that want to know you and have business dealings with you. Each one of these manufacturers has spent time and money, infinite pains and study, to develop some mechanics' tool or piece of machinery or some building material that will be the best of its kind. Something that will help you to be more skillful, or save you labor, or increase your profits, or help you add to your reputation as a builder.

Every advertised commodity has this in its favor: that some man or group of men—experts in their particular line—have supreme confidence in that commodity. They are willing to stake their reputation and their fortune upon it.

The very least you can do in return is to investigate that advertised commodity and see if you could use it to advantage. Like enough it is just what you have been needing.

Among all these 267 advertisers you will find the foremost representatives of every line connected in any way with the work of the present-day carpenter and builder. Look through these pages this month; note the variety; appreciate the reputation, the high standing of the firms represented. They are the leaders to-day.

This advertising section is a trade directory for builders. It will keep you up to date and bring the business your way just as it has with our friend from down the State.

Don't wait until you need some item of material or equipment so badly that you can't wait any longer; investigate in advance. The long winter evenings are coming on; now is just the time to study trade catalogs and get ready for bigger, more intelligent and more aggressive work.

267

As you look through these advertising pages do you feel yourself acquainted with each one of these concerns? You ought to; for they want to be your friends. Each one invites you to write and get better acquainted. You will find them true-blue friends to know.

We are proud that the readers of the AMERICAN CARPENTER AND BUILDER occupy such an important place in the building world to-day that so many of the leading manufacturers want their friendship and co-operation.

267

How They Plan and Build Houses in England

A COMPARISON OF ENGLISH AND AMERICAN METHODS

By C. R. W. Edgcumbe

THE English home of today is a far different home from that constructed ten or fifteen years ago. There has been a vast improvement indeed. I am an Englishman by birth and an American by adoption, and have spent years of my life on both sides of the Atlantic. Consequently I am in a position to write in an unbiased manner.

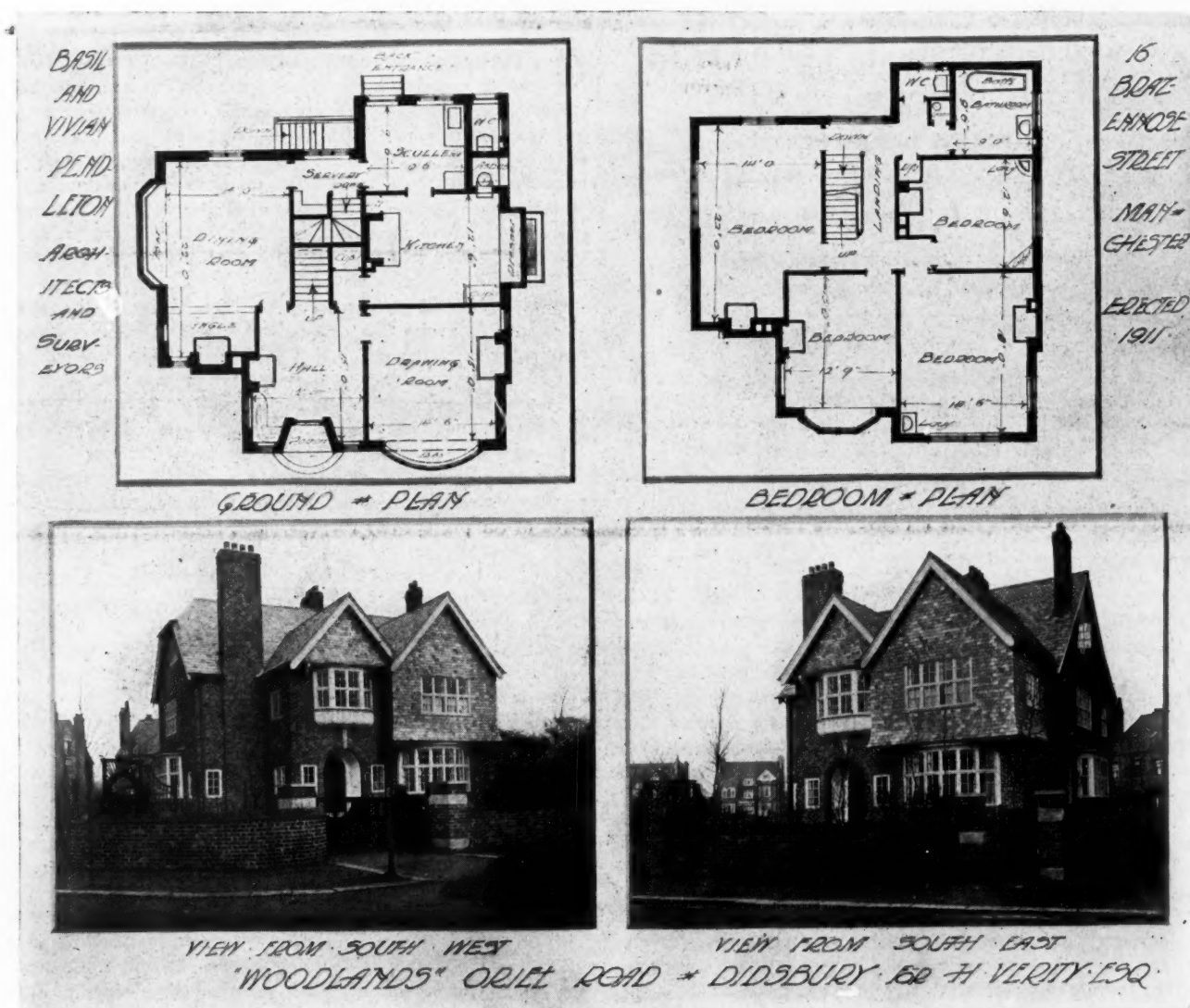
Fortunately, I was in a position this summer to make a trip to my old home and while there looked well into the building situation. Among the architects whom I visited, none treated me better than the architectural firm of Basil and Vivien Pendleton of Manchester, England, and to them I am indebted for the illustration used in this article.

The English builder is slowly but surely adopting American methods just as the American builders in the larger centers of this country are adopting English

methods. However, the American is in many cases adopting English types of houses while the Englishman is adopting the American methods of building, of heating, of equipping the home with labor-saving devices, etc., etc.

I think I am safe in saying that the average English home of today is a more substantial structure than the American. The American home, however, even if not so well constructed, affords far greater convenience for the housewife, far greater home comfort for the owner, and far more satisfaction for all concerned.

The accompanying illustration shows a modern English home built in Didsbury, Manchester, under the plans and supervision of Basil and Vivien Pendleton. This home would grace any of our streets in America, whether in town or country. The total cost of this building (in England) was twelve hundred pounds, or



An English House of the Newer Sort, Built Complete (Including Fence) for \$6,000. Contains Nine Large Rooms; Brick Walls, Slate Roof

less than \$6,000.00 in good old U. S. coin of the realm. This price is inclusive of plumbing, and also includes the brick fences built around the boundary of the property, but does not include heating equipment other than fireplaces, which are to be found in practically every room, large or small.

In England there are comparatively few homes in which heating plants are installed, inasmuch as the milder climate of England does not seem to require it. That is, it does not seem essential to the average Englishman's happiness. Still, in some of the better and more expensive homes and many of the apartment buildings, especially in the larger cities, heating equipment is very often found, and wherever it is used, affords the utmost satisfaction.

To the American, or even the Americanized Englishman, who is used to steam, hot water, hot air, or even stove heat, the heat of the English house is pitifully inadequate. True the open fireplace, with its cheerful blaze, is a thing of beauty, and can't be beat from a ventilating standpoint, and all that sort of thing, but it lacks that vital essential—heat.

If you sit close enough, all is fine and dandy. Your face will be delightfully warm, as will that part of your anatomy that is exposed to the blaze, but cold chills will chase each other, first up and then down your spinal column, in utterly delightful confusion, like kids at play on a spiral stairway.

To overcome this state of affairs, you first face the fireplace then back up to it, until your temperature is normal. Still, to the man who has lived his life in England and has not tested the joys of steam heat—and consequently knows not the true American "warmth satisfaction"—the heat afforded by the fireplace is amply sufficient and I even heard our American heating system ridiculed by men who really knew better.

They said it was "un'healthy," that is was "insanitary, don'tcherknow," that fresh air was nature's first requirement, in fact, "the 'ole bally heating system was a bloomin' h'American joke, don'tcher know," and while they were uttering these terrible words, they would be standing, their hands behind their backs in front of a blazing fire, for which I was paying "two bob" (fifty cents American) extra each week. This was in the middle of August, 1912. (What must it be in January?)

To me it really seems that they need heating equipment even more than we do out here, for the English climate, specially in the winter, is, while not extremely cold, very raw and penetrating.

Leaving the question of heat out of consideration, the modern home of England is an attractive place in which to live. True, you don't see many houses with beautiful verandas as we do here in America, but I suppose the climate is responsible for this.

Practically every house, whether mechanic's or millionaire's, has a fence of some description surrounding

it, and I figured it out that the higher the cost of the house, the higher the fence. These fences give the streets a narrow appearance. What the Englishman's object is in shutting off his view of the street, I have not been able to fathom. Possibly it gives his home seclusion, and if he wants seclusion and privacy it is his inalienable right to have it.

In the photograph, you, as a builder, will note the absence of closet room in the bedrooms of this home. This, to the American housewife's eye, is a serious defect, but the wardrobe of the English bedroom is a piece of furniture that has become almost an institution. These wardrobes are made substantially of precious woods and are very complete indeed. "No home or bedroom is complete without one," and no matter what furniture company "feathers your nest," as our friend Hartman puts it, this wardrobe is always included.

You will notice, with surprise possibly, the words "Serving" and "Scullery" on the drawings. This is purely English. The "Serving" is analogous to our American "butler's pantry," while the scullery has no American equivalent. The English scullery is a sort of kitchen, oftentimes equipped with a stove, where dishes are washed and where the "boots" (we call them shoes) of the male portion of the household are shined each morning regularly.

To me, one of the most beautiful and artistic things about the English home, is the window scheme. They have given up the "one large plate" idea entirely. With an infinite number of smaller panes a very great diversity of harmonious decorative schemes can be worked out to give the house distinction.

In years past, the English home has been constructed in rows, each one attached to its neighbor, and each row being almost identical. This has produced street after street which resemble each other as do twin peas in a pod and consequently make it extremely hard for the man who comes home with a "bun on," as we say here, or "a bit top 'eavy," as they say over there, to locate his exact street, and his own home when he finds his right street.

In the old feudal days, when might was right, and a certain baron ruled over his vassals, they started to build their houses in rows, close to the baron's fortress or castle. This was done solely for protection, but the habit grew and grew until it became another institution, and institutions like our "Tammany institution" of New York, are mighty hard to shake.

Englishmen are conservative—extremely so—but this conservatism is being gradually overcome along many other than building lines.

In an early issue of THE AMERICAN CARPENTER AND BUILDER will appear an article on "Garden Cities of England," from facts gathered from prominent architects, and my own camera. The pictures will be interesting "tennyrate."

IDEAS FOR HOME BUILDERS

Five Strong, Practical House Designs

PHOTOGRAPHS AND FLOOR PLANS OF SOME EXCELLENT DWELLINGS BY VARIOUS WELL KNOWN ARCHITECTS AND BUILDERS, WHICH CONTAIN MANY GOOD IDEAS

BUILDERS can work up trade just the same as any other class of business men. They have as "prospects" all the people who are renting houses and feel the hunger for a real home; all the people with large families that have outgrown their present quarters; and all the owners of old dwellings which should be entirely remodeled or abandoned for a new residence.

All these "prospects" are interested in house plans and house designs. They are looking for ideas. They want to know how houses have been planned and built successfully. The designs shown here contain some

Shingled House with Circle Bay

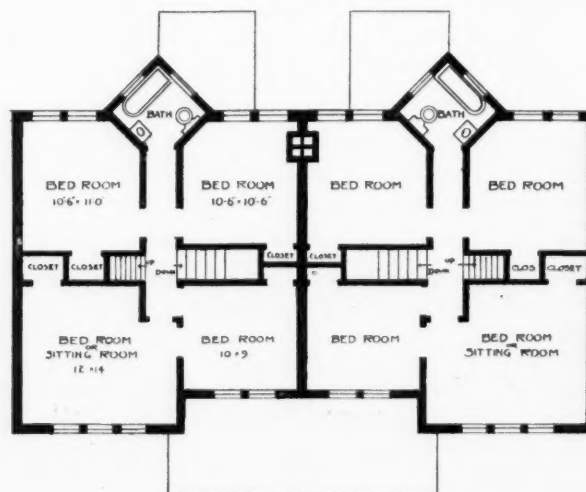
The next house has seven good sized rooms and a very large attic. This house was erected in Brockton, Mass., three years ago at a contract price of \$2900, after plans drawn by W. F. Barlow, Jr., architect, of that place. The house is finished throughout with hardwood floors, with standing finish in parlor, of



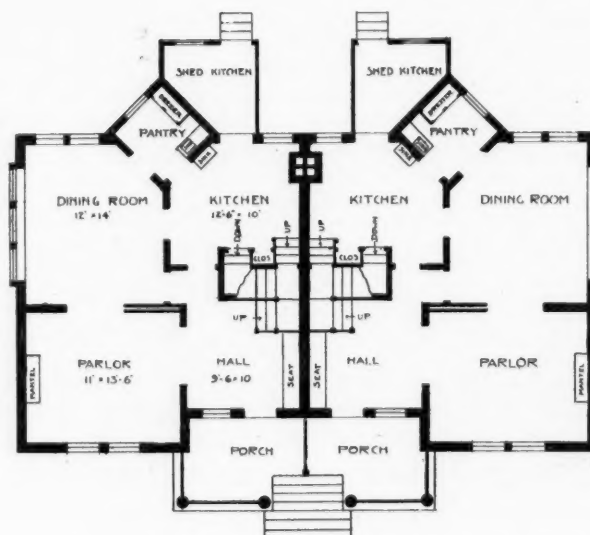
Well-Designed Double House, Built From Plans Prepared by the Suburban Architectural Association, Wilmington, Del.

very good ideas. We trust our readers will be able to use them to advantage.

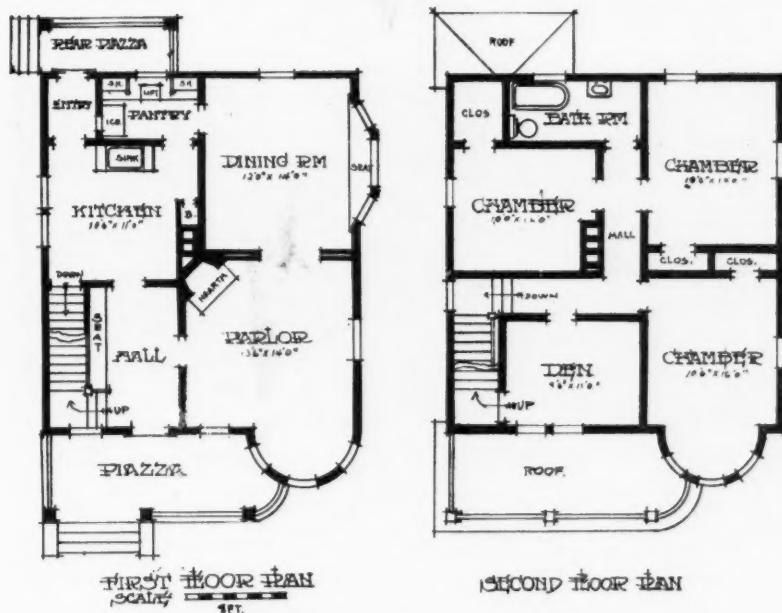
A double house of sensible, clean-cut lines is shown. Each part has three large rooms besides entrance hall, pantry and shed-kitchen on the first floor, and four nice bedrooms, bath and ample closet space upstairs. A double house of good design gives all the comforts of a single detached residence, and at the same time is an income producer. Many feel they can't afford to occupy an entire house themselves "The other half" of a double house can produce enough rent income to carry the entire investment.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



Showing Interior Arrangement of Barlow House

white wood, painted; dining room, cypress, stained; kitchen, North Carolina pine, finished natural; chambers, whitewood, painted.

The house has steam heat in every room, and is lighted with electric lights. Rooms on second floor all have full height walls. Seat in reception hall and light coming from newel post lamp make a very attractive and pleasing entrance.

The refrigerator is iced from back entry through door to refrigerator. Short window in parlor enables one to place piano under it.

California Brick Residence

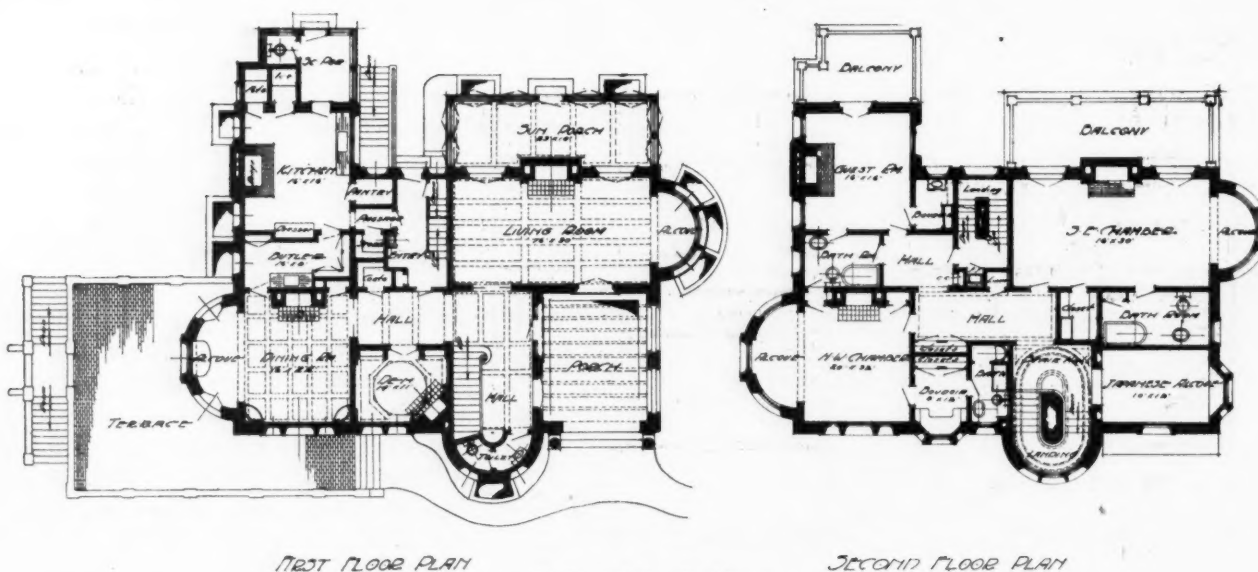
More than passing interest attaches to a residence built by an architect for his own use, because of the natural inference that it embodies his ideals in the matter of design, arrangement, comfort and elegance. This inference finds justification in the house erected by architect A. F. Rosenheim, in Los Angeles, Calif. It is substantially built of brick and contains twelve rooms conveniently arranged and completely equipped. The architecture is English contemporary style. It was built by the owner for his own use without particular regard to cost, largely by day labor, under his personal supervision. Eighteen months were consumed in its construction. Built by contract, it would have probably cost \$50,000.

On the main floor are the entrance and stairway halls, living room, dining room, den, sun parlor, kitchen and butler's pantry. The entrance and stairway halls are finished in Peruvian mahogany with paneled wainscot 5 feet high and beamed and paneled ceiling. The decorations are in oil colors to harmonize.

In the living room, which is 16 by 22 feet, there is a large fireplace with marble hearth and facings, andirons and gas logs. It is finished in Cuban mahogany with paneled wainscot 5 feet high and heavy beamed ceiling. The walls are covered with richly figured



Seven-Room Shingled House Built at Brockton, Mass., for \$2900; W. F. Barlow, Jr., Architect



FIRST FLOOR PLAN

A. F. Rosenheim Residence

SECOND FLOOR PLAN

tapestry and the ceiling panels are appropriately decorated. All the metal work in this room is of Verde antique bronze. Adjoining the living rooms is a sun parlor, 10 by 22 feet, with mosaic tile floor, brick walls and terra cotta trimmings and finished in stained Oregon pine with beamed and paneled ceilings. Three sides are enclosed in glass, and communication with the living room is by two sets of French doors.

The dining room, 20 by 25 feet, is finished in Cuban mahogany with paneled wainscot to the tops of the doors, and an elliptical vaulted ceiling paneled by shallow beams in both directions and decorated on gold ground with Japanese designs in keeping with the

general scheme of color and furnishings. There is also a large fireplace with mosaic tile hearth and facings, andirons and gas logs, built-in buffet and glass and china cabinets. All the metal work is of oxidized silver. French doors open to the broad terrace with tile floor and brick balustrade which overlooks the gardens to the north.

Curly sugar pine is the trim for the den, 12 by 14 feet, which has a dome ceiling with beams and panels. There is also a paneled wainscot 4 feet high, built-in bookcases and cabinets. The doors communicating with the hall are glazed with Tiffany Favril glass. African marble forms the hearth and facings of the



Magnificent Residence of Mr. A. F. Rosenheim, Los Angeles, Calif. Cost \$50,000

fireplace which is fitted with andirons and gas logs. The decorations are Indian style and the metal work is oxidized copper. Polished oak floors are laid in the main halls and principal rooms.

The kitchen, 16 by 16 feet, is finished in oak with a silver gray stain, wainscoted with enameled tile 4 feet high. The base and all the door and window trimmings are marble.

on all floors; complete intercommunicating telephone system; burglar alarm operating one light in each room and hall by means of a push button in the principal bedroom; automatic water heater; laundry chute with connections to each floor.

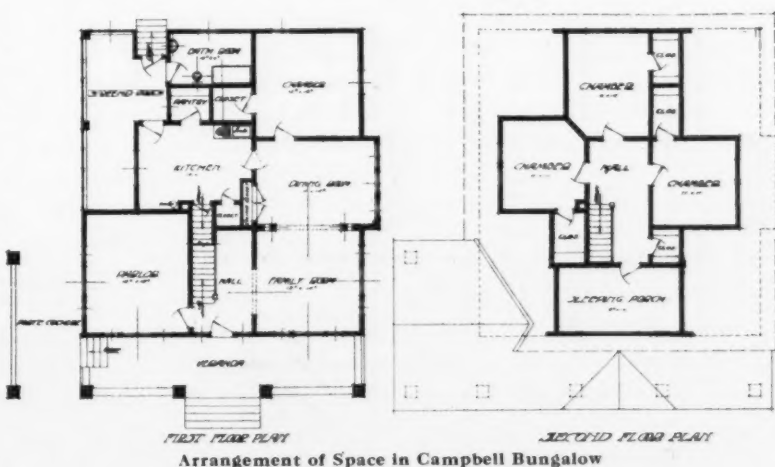
A Modern Western Bungalow

Through the courtesy of H. B. Campbell, architect and builder, of Marcus, Wash., we present to our



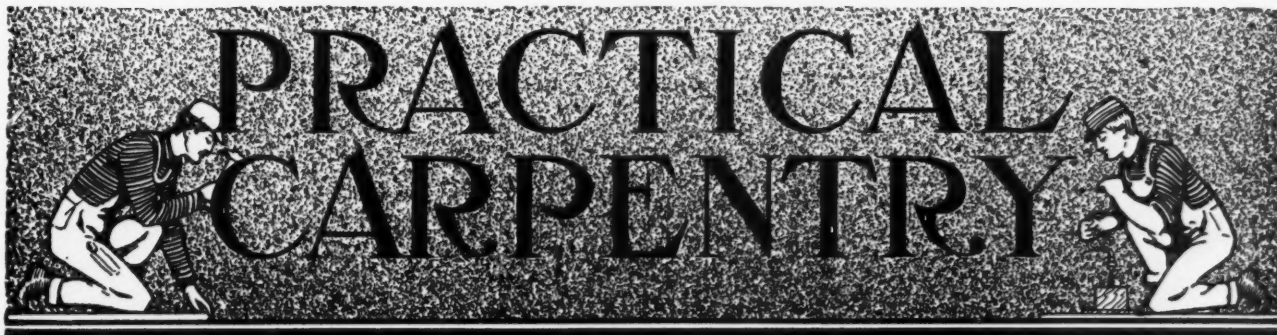
Eight-Room Bungalow Cottage Designed and Built by Mr. H. B. Campbell, Marcus, Wash., Cost Complete, \$2500

The rear stairway extending from the basement to the third floor is finished in plain oak. On each floor adjacent to the rear halls is a housemaid's closet with slop hopper and other conveniences. On the second floor are three large bedrooms, each provided with individual dressing room, and baths. The bath rooms all have white marble floors and wainscot and are equipped with up-to-date, sanitary plumbing fixtures and special fittings. A basement, 9 feet in the clear, with cement floor, extends under the entire house. It contains a laundry with 3 set trays and patented clothes dryer and drying room adjoining. There is also a large storeroom with wine closets and shelving for preserves. The furnace room has ample bins for soft coal and wood with chutes located near the driveway for dumping fuel. The house is heated by hot air furnace of eastern make, enclosed with brick. Other special features include a complete vacuum dust cleaning plant with outlet on each floor; special fire lines with rack and hose in basement and



Arrangement of Space in Campbell Bungalow

readers a photograph and floor plans of a beautiful bungalow recently erected by him in that city. The plans show five rooms on the first floor conveniently arranged for modern social purposes. This building stands on a corner lot and possesses a rather unusual feature, a covered automobile driveway, accessible from the front porch. There are three bedrooms up stairs, all arranged with closets, and a roomy sleeping



How to Do Work Fast

THIRD PAPER

By I. P. Hicks

IT is true we are living in a fast and progressive age, and all are more or less enthusiastic in regard to the speed proposition. Buildings are being put up now in a few weeks that used to take several months to erect a few years ago. The lessening of the time to construct certain work is the result of study and experience in the building business.

How to do work fast is interesting to most of the people who build. It is interesting to the owner because he can get the use of his new building quicker. It is of special interest to the contractor for it means a less outlay of expense to him in the construction of his work. We do not mean to sacrifice the quality of the work for speed in any case; but it is the "know how," the thorough knowledge of the best methods of doing the work that we want to impress upon the minds of our readers as the most essential thing to make speedy work.

Raising a Hip Roof in 30 Minutes

At this time we want to deal with the framing and raising of hip roofs, which in these days are quite numerous. It has long been the custom to frame hip roofs with a ridge which has always made it necessary to erect a temporary scaffold in the center of the building 5 to 8 feet high, about 4 feet wide and 12 to 20 feet long, these dimensions of course varying according to the size of the roof. On the ordinary residence job we have discovered a fine way to do away with all this scaffold work. The cutting up of the lumber and the handling of it is all saved, much to the advantage of the contractor and to the detriment of no one. With five men after the rafters are cut we can put every one in place in 30 minutes. We have done this many and many a time. By old time methods it would take two men two hours to put up and take down the scaffold and the whole five men would consume 4 to 5 hours raising the roof.

The way we do it is this, referring to Fig. 1, space the rafters so that the end common rafter has exactly the same run as the pair of common rafters which it is to join at the top. Nail the pair of common rafters together at the top in the usual manner, then nail the end common rafter right in the center at the top,

having one man hold the foot up so that the top will come to the right position for nailing. When nailed one man to each rafter up they go right into position; and when nailed at the bottom they need no brace or anything to hold them, for the end rafter is a brace of itself. Raise the other end in the same way.

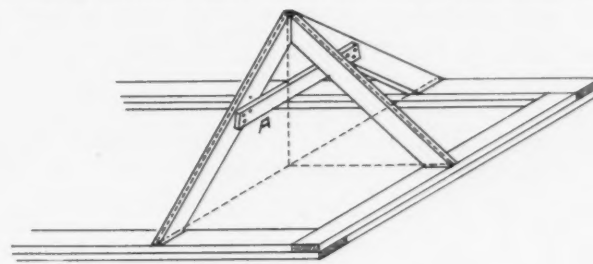


Fig. 1.

2 by 4 Nailed to Last Pair of Common Rafters is only Scaffold Needed

After raising spike on a 2 by 4 across the pair of common rafters as shown at A, Fig. 1, at a proper height for a man to stand on to nail in the hips. This can, in most cases, be reached from the ceiling joists, or from a saw horse at least. From the 2 by 4 across the rafters the hips can be nailed in place, also the longest jack rafters. All the other rafters can be nailed from below easily and quickly, and there has been no scaffold to erect or to take down. Just knock off the two 2 by 4's across the two end pair of common rafters if you do not care to leave them there, and that is all there is to it. It is the quickest and best way you ever saw when you get next to it.

All Rafter Patterns on Same Stick

Another important thing, is the framing of the rafters. Fig. 2 shows how we lay out a pattern for the common rafter, and the different lengths of jacks all on the same stick. When all these lengths are

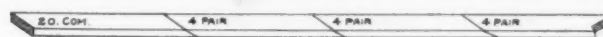


Fig. 2.

Patterns for all Rafters on Same Stick

marked off on one pattern, much less time is consumed in laying out the work. Then, too, when laid out in this way the foreman can hand it to a couple of men with the instructions: "Here is the pattern for

the rafters, with the lengths, bevels, and number of pairs of each marked on the pattern; proceed with the work." It is a good way to frame rafters with a notch or shoulder at the foot to keep them in place while they are being nailed. It helps a great deal in the raising because they cannot slip off the plate, and it makes the nailing much easier.

Laying out Rafters

The simplest plan for laying out rafters is as follows: Lay the square on any straight edge, with the figures on the blade and tongue that correspond with the pitch of roof that you want, as shown by Fig. 3, as with the figures 12 and 9. This represents the pitch of the roof. Now, with the blade of the square exactly on the same pitch, slide it forward or backward, as the case may be, till the figures on the blade represent the width of the building or the run of the rafter you want, then the tongue will represent the corresponding rise, and the distance on the straight edge,

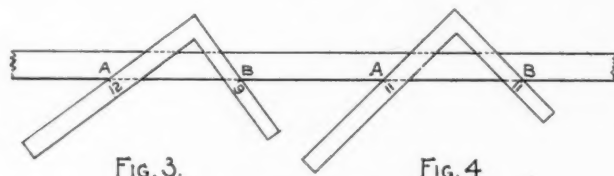


FIG. 3.
Laying out Common and Hip Rafters

as from A to B, will be the length of the common rafter. In the figure a rafter with a 12-foot run and 9-foot rise is represented. If over 12-foot run is wanted, slide the square forward on the same pitch; if less than 12-foot, slide the square back to correspond with the run wanted, and it will always give the true length in every case.

Hip Rafters

The length of a hip can be determined by the same process with two calculations. First take the run of the common rafter on both the blade and tongue of the square, as shown by Fig. 4. In this case we will take 11 and 11, odd figures, to show that it is easy, no matter what the figures are. You can have odd inches of all kinds and still no bother when you use this method. The distance A to B represents the run of hip. Now, with the square laid on the straight edge with 17 on the blade and the rise of the roof on the tongue, mark along the blade; this represents the pitch of the roof. Now, the distance A to B, Fig. 4, is nearly $15\frac{1}{2}$ inches. Slide the blade of the square back on the straight edge to $15\frac{1}{2}$ inches, keeping the

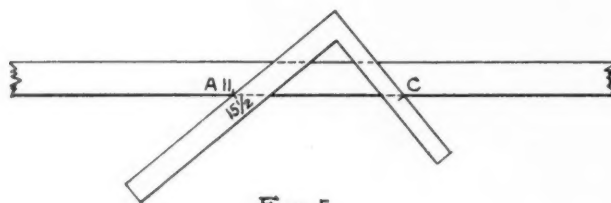


FIG. 5
Getting Length of Hip

same pitch, then the tongue represents the rise of the hip and the distance from A to C, Fig. 5, is the length of the hip required.

We have seen many inquiries as to which is the best square. There are, no doubt, several good makes, but really the best of all is *to know how to use the square*, for that is what brings the results. It's not so much the square that counts, but the proper use of it.

Learn to frame a roof as we have outlined in this article, and any old square that is "square" and has figures on it that you can see, will serve your purpose so well that you will have no ill will toward it, no matter who the maker was.—Omaha, Neb.



Hints for Carpenters

LITTLE THINGS FOR THE WOODWORKER TO NOTE AND REMEMBER

Every woodworker discovers little short cuts in his work which materially help him to attain rapidity and perfection, says the "Blacksmith and Wheelwright."

In measuring with a rule, tip it on edge so that the dimension marks are adjacent to the piece being laid out, and in taking a series of dimensions start from one point only.

Always tip a plane on its side when laying it on the bench so as not to dull the iron. For the same reason always raise the plane from the work on the return stroke.

In planing end grain never run the plane entirely across the end, but work from both edges toward the center of the piece. This prevents the splitting of corners.

In using an oil stone there are three things to observe: (a) Use plenty of good oil; (b) clean the stone well before putting it away; (c) use the entire face of the stone, not merely the center. If these precautions are taken a stone should cut perfectly for years.

In sharpening plane irons and chisels always rub on the bevel and never on the back, as this must be perfectly straight at all times to insure perfection in cutting.

In boring never bore entirely through a piece, but reverse the piece and finish the hole from the other side after the worm penetrates.

Do not drive a screw into a board with a hammer, as its holding qualities will be greatly lessened.

Always drive nails and brads at an angle, as they will then hold more securely.

In sandpapering always use a block if possible, as this will prevent rounding edges where they are not wanted.

Sandpaper should be used for cleaning and smoothing purposes only. Do not depend upon it for doing the tool work.

Sandpapering should not be done across grain.



Prize Layout for Small Planing Mill

A MODEL DESIGN FOR A COMPLETELY EQUIPPED POWER WOODWORKING SHOP SUCH AS A CONTRACTING BUILDER CAN OPERATE AT A PROFIT, MANUFACTURING ALL HIS OWN MILLWORK

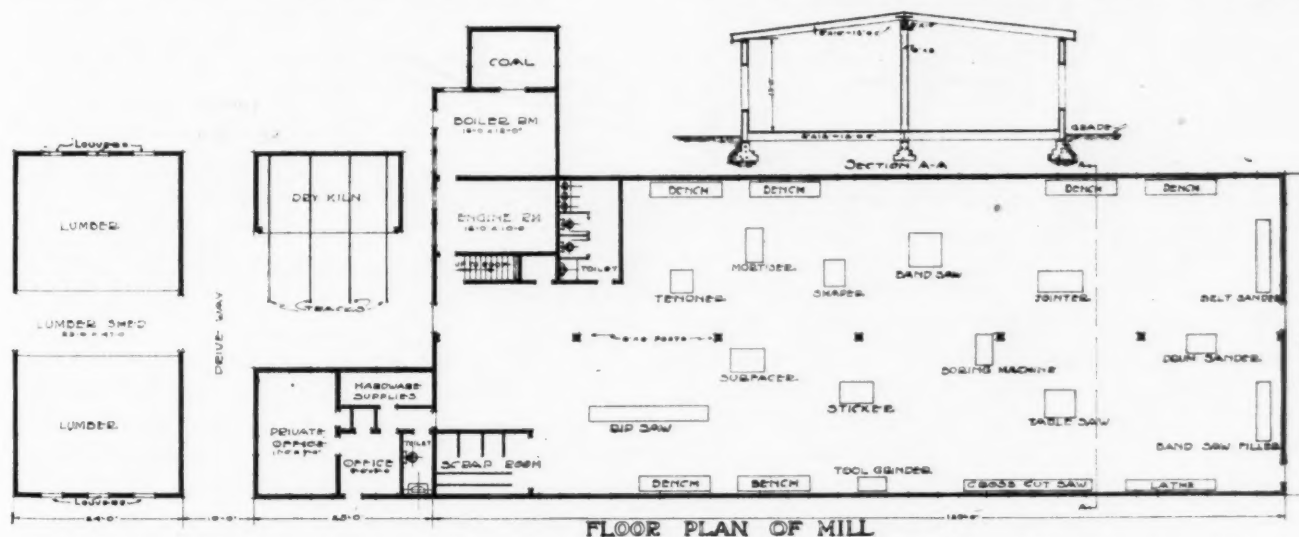
HERE comes a time in the business life of every builder when he feels the need of having a millwork factory of his own. Builders are an independent lot; they don't like to be obliged to wait on outside parties for their building materials. The millwork situation is usually covered by a single factory (at the county seat) which supplies, or attempts to supply, the building contractors and retail lumbermen for a radius of miles around. In the building season every one wants his millwork at once; and the result is that the mill man is swamped. And some one has to wait. If this some one is a builder—an aggressive sort of a man, doing a good line of work—he doesn't stand for lost profit of this sort often.

No sir, he figures out that he can make sash, and doors, and blinds, and frames; interior trim and cabinet work, just as well as the other fellow; that he can use up everything he can make on his own building operations, or if not can easily market the surplus; and so make a double profit on everything, the manufacturer's profit on making the mill work and the builder's profit by putting it in place. But more than that he figures a mill would make him independent. The architects and the owners would have new confidence in him because of his extra facilities for turning out the work on time, and in accordance with the drawings.

Last month we presented a design and floor plan layout of a small woodworking shop suited to the needs of the average carpenter and builder. The plan offered here is for a larger woodworking shop, in fact a small planing mill, very completely equipped.

The shop proper is a one-story, flat roof building, 45 by 120 feet. There is an office in connection, also lumber sheds and dry kiln.

If you will examine this plan you will see that the lumber can be brought through from the lumber shed to the dry kiln (the drive-ways are all under cover) and from the dry kiln it comes first to the rip saw, then passing right along from one machine to the next for the various manufacturing operations. Surfacers, sticker, boring machine, table saw, cross-cut saw, lathe, drum sander, belt sander, jointer, band saw shaper, mortiser and tenoner. There is a tool grinder, band saw filer and room for other miscellaneous pieces of equipment as needed. There are six woodworking benches. The scrap room is right by the rip saw and has bins and racks for the orderly keeping of scrap pieces. The scrap pile is a gold mine of profit to the mill man who knows how to use it. The hardware supplies are where they can be watched from the office. A flight of stairs leads up to the roof which is often the best place for laying out extra big work.



Small Planing Mill With Contractor's Office, Lumber Shed and Dry Kiln in Connection. Note that all Machines are Placed for Most Economical Handling of Stock

Automobile Power for Driving Machinery

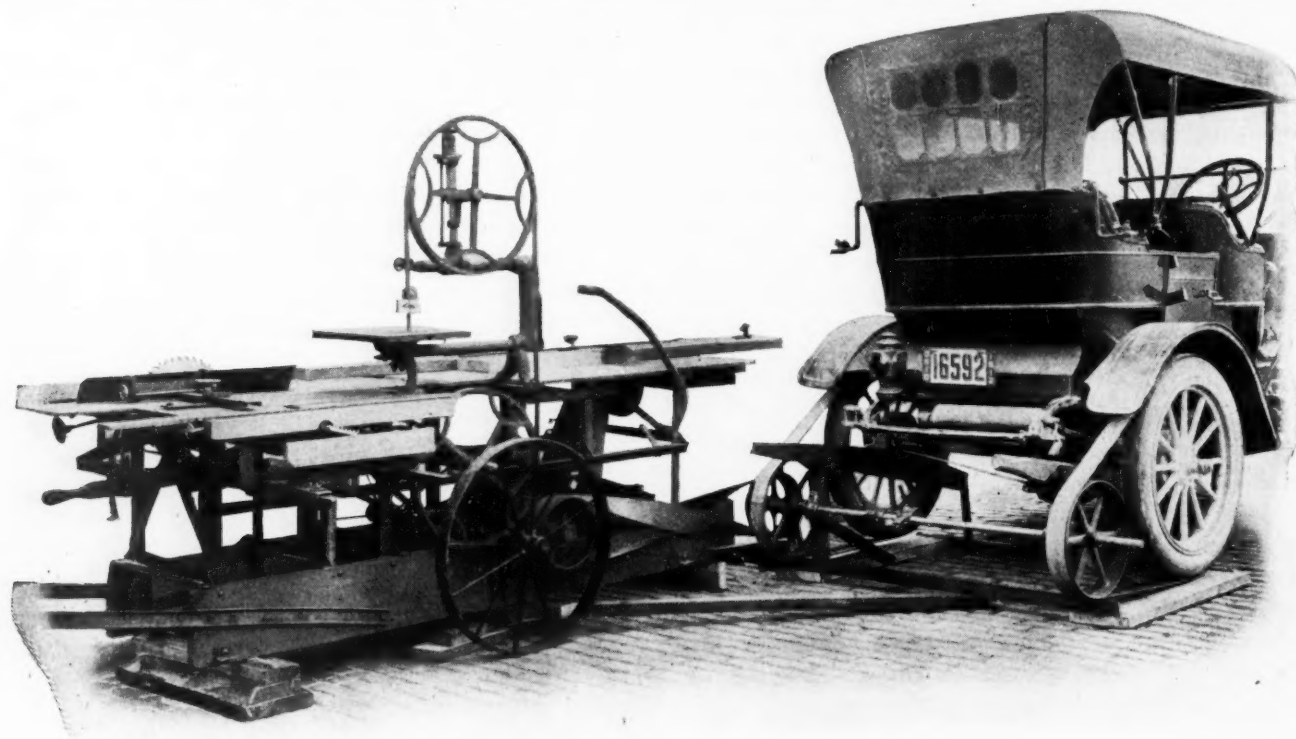
AN INGENUOUS RIG BY WHICH ANY AUTOMOBILE OR MOTOR TRUCK CAN BE BELTED UP TO FURNISH POWER EITHER ON THE JOB OR IN THE SHOP

Editor AMERICAN CARPENTER AND BUILDER:

HEREWITH are pictures of a portable combination woodworking machine and apparatus for driving same by automobile. This very ingenious contrivance was originated by Mr. L. F. Parks of the Parks Ball Bearing Machine Co., Cincinnati, who though not a brother carpenter is a manufacturer of an extensive line of woodworking machinery. In view of the article which you published last month of power driven machines, we feel this will be very interesting. We are giving you herewith details in a rough way.

The woodworker itself has two 2½-foot iron wheels fastened to axle, which is securely mounted in the

atus for driving woodworking machines by automobile power. Details of driving apparatus are as follows: Two bars of angle iron 2 inches high, 2 inches wide, ¼ inch thick are bolted at each end to an ordinary 2 by 10 inch plank. These planks are about 40 inches long, making the distance between the front and rear angle irons about 40 inches. To the front angle iron or the one nearest the machine, are bolted two upright angle irons of same dimensions as others about 20 inches high. About half way up these angle irons the shaft and bearings are bolted on. At each end of the shaft a 15-inch wheel is attached, and at end of shaft nearest the machine outside the 15-inch wheel the belt pulley is attached. As this apparatus is lo-



Automobile Driving Combination, Portable Woodworker; With This Ingenious Rig the Back Wheels of Auto are Jacked up Slightly and Belts run on Both Rear Tires; a Governor on Shaft Prevents Speeding

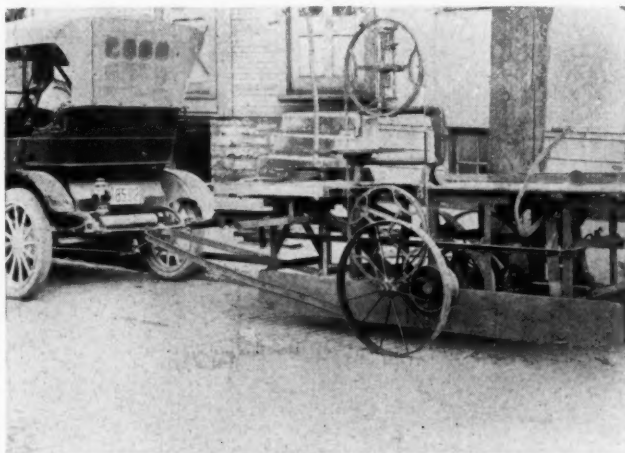
center of the bottom frame. When these wheels are attached to the axle, the machine can easily be moved from one place to another. When the machine is at the desired location, by removing the wheels or by blocking up each end (which is a simple matter) the machine rests securely on the foundation. To the front of machine, Mr. Parks has attached an ordinary angle iron frame and fastens this with a pin to the rear of his automobile, so that all he needs to do when he wants to move the machine from one job to another, is to slip on the two wheels, back the automobile up and haul the machine to any desired location.

The photographs show his idea of the proper appar-

ated at the side of machine, this brings the belt pulley in direct line with pulley on machine. To the rear angle iron, two upright angle iron pieces about 12 inches high are fastened. To these, two pieces of 2x6 about 5 ft. long are bolted on. These 2x6 pieces extend over across drive shaft as shown in the photograph.

Mr. Parks simply backs his automobile, a 20 H. P. Carter car, up so that the rear axle is over these two pieces, and the rear wheels are in line with the two pulleys on the drive shaft which are exactly the same distance apart as the two wheels of the automobile. To raise the automobile off the ground, he simply pulls up each lever to the required distance and slips

an iron pin through holes in the angle iron upright piece. A notch is cut in each of the 2x6 pieces at the required distance so that when the rear axle of the automobile slips into the notch, the wheels are at the required distance from the drive pulleys. A belt runs from each automobile wheel to the drive

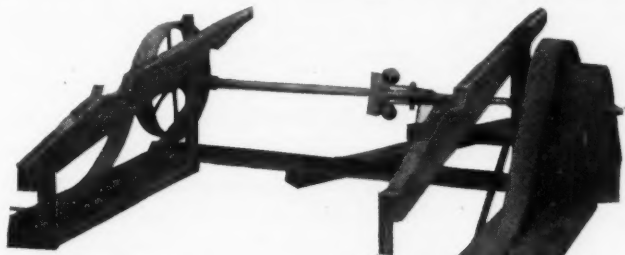


Woodworker Mounted on Large Wheels and Hitched to Auto for Moving

pulleys, and a twisted belt from the drive pulleys to the woodworking machine.

This arrangement has proven very successful. The belt sticks to the automobile tires and does not slip in the least. It is much more practical than trying to drive the pulley by friction from the automobile tires, because if the automobile wheel slips on the pulley it will soon heat the rubber and spoil the tire.

Any carpenter can make this apparatus. All he needs is to purchase the required pieces of angle iron, shaft and pulleys. The most important thing is the arrangement of some sort of a governor on the drive shaft. As you know, an automobile engine has no governor and it will be impossible to use an automobile without some arrangement of this kind, as the automobile engine would run away with itself as soon as the load was taken off the machine. To overcome this, Mr. Parks has arranged a governor on the drive shaft which consists of two balls attached to a loose collar. These balls are governed by a spring;



Jack and Countershaft Showing Governor

and this spring can be so regulated that when speed of shaft reaches a certain velocity, the balls will be thrown apart and will cause the loose collar on the shaft to which they are attached, to press against another loose collar, and causes it to turn. To this

loose collar is attached a small chain which is fastened to the brake; and as soon as the brake has reduced the speed of shaft to required velocity the collar runs loose again.

The brake consists of an ordinary piece of wood about 2 ft. long bolted at one end to the angle iron frame, on the outside of the drive pulley. The other end of the stick is directly under the governor, and attached by a chain to the loose collar. Naturally as soon as the loose collar begins to turn it tightens the chain and pulls the stick or brake against the drive wheel until the speed is reduced.

The most difficult proposition is the manufacture of the governor. If our readers can not see their way clear to make these governors, further information may be obtained from Mr. Parks.

PARKS BALL BEARING MACHINE CO.



Saw Rigs for Reinforced Concrete Form Work

The builder who makes a specialty of concrete work often finds—strange as it may seem—that he uses up more lumber than he does Portland cement on any good size reinforced concrete job, also that his carpenter labor cost runs higher than that for his cement workers.

The lumber forms are the big item in concrete work to-day. Sawing the lumber up for forms is a long and



Portable Saw Rig Sawing Form Lumber on Big Reinforced Concrete Job for the Hanson Construction Co., Milwaukee, Wis.

tiresome task when done by hand. The lumber is rough and heavy and not the kind that the skilled carpenter takes pleasure in working.

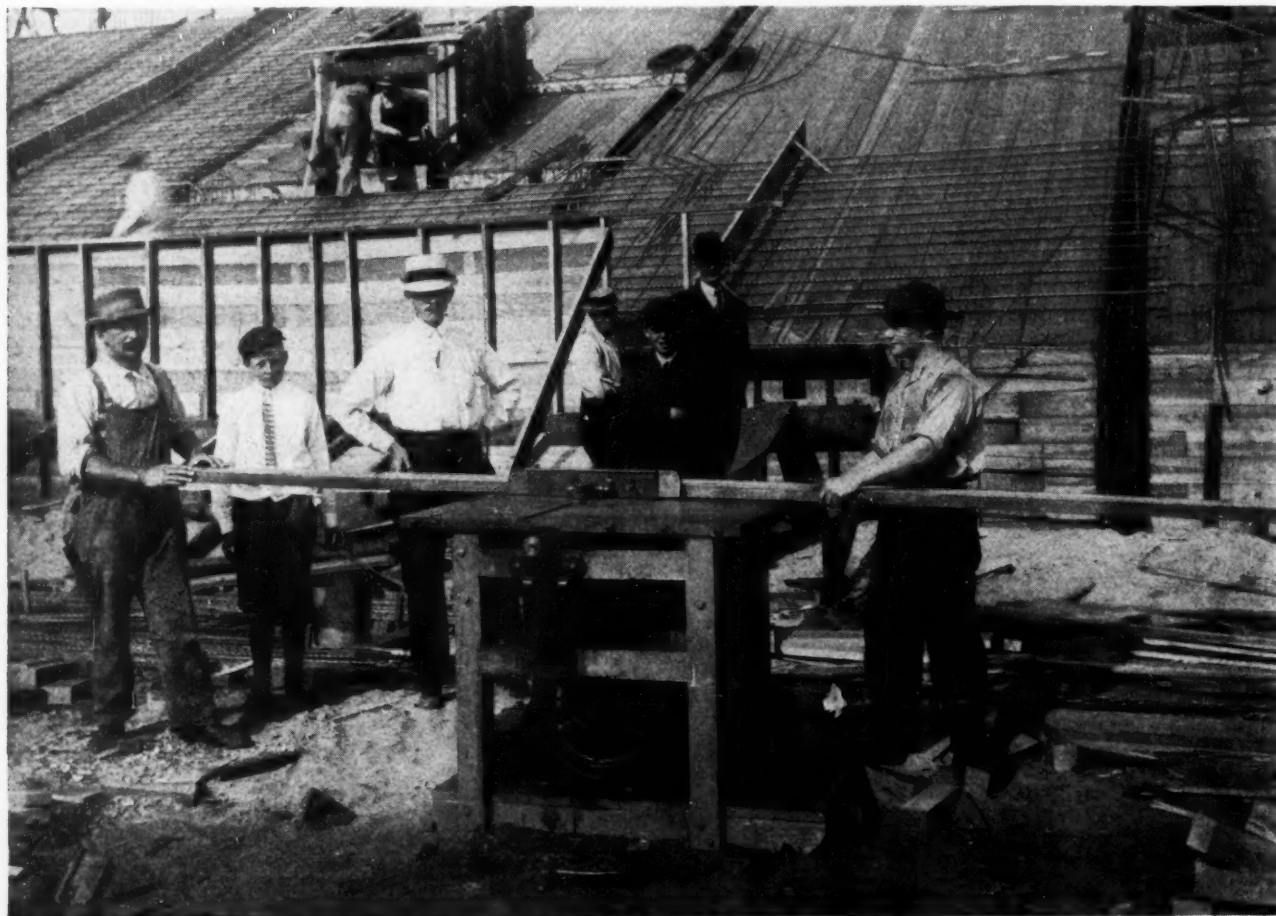
Here is where the power saw rig comes in; cleans up this sort of work in a hurry and shows the builder a big profit.

As illustrations of what portable saw rigs are doing on big reinforced concrete operations we are permitted to show two photographs, one of a three horse power

gasoline engine saw rig at work for the Hanson Construction Company of Milwaukee, sawing form lumber for reinforced concrete work. The other photograph shows one of two power saw rigs operated by contractor Edwin L. Scheidenhelm of Chicago, on his big

power purchased from the street lighting company.

By this plan, more rapid and cheaper construction will be possible. The electrical installation was made under the direction of Superintendent Thomas Yawger of the lighting company, who is enthusiastic over this



Portable Saw Rig With Contained Gasoline Engine at Work for Contractor Edw. L. Scheidenhelm of Chicago, Cutting Up Form Lumber on the University of Chicago Reinforced Concrete Grand Stand Job

reinforced concrete project for the University of Chicago, the "Marshall Field" grand stand.

Both contractors, Hanson and Scheidenhelm, write that for reducing the labor cost on cutting up form lumber and working the pieces to shape there is nothing equal to a good portable saw rig. Each machine has its own power generating mechanism within itself in the shape of a gasoline engine that is ready to start working at any time and keep it up. If desired, saw rigs of the same type can be had equipped with motor for electric driving.



Electricity Aids Builders

WOODWORKING PLANT ON ROCHESTER, N. Y. JOB OPERATED BY CURRENT FROM LIGHTING POLES

Mr. Fred C. Bradburn, a building contractor of Rochester, believes in letting electricity do the work, that is, the heavy work and monotonous, while his skilled carpenters are better employed in other ways.

On a contract commenced the 1st of September to erect 72 houses in a real estate addition he has set up a complete little woodworking plant at the center of the building operation, and is running it by electric

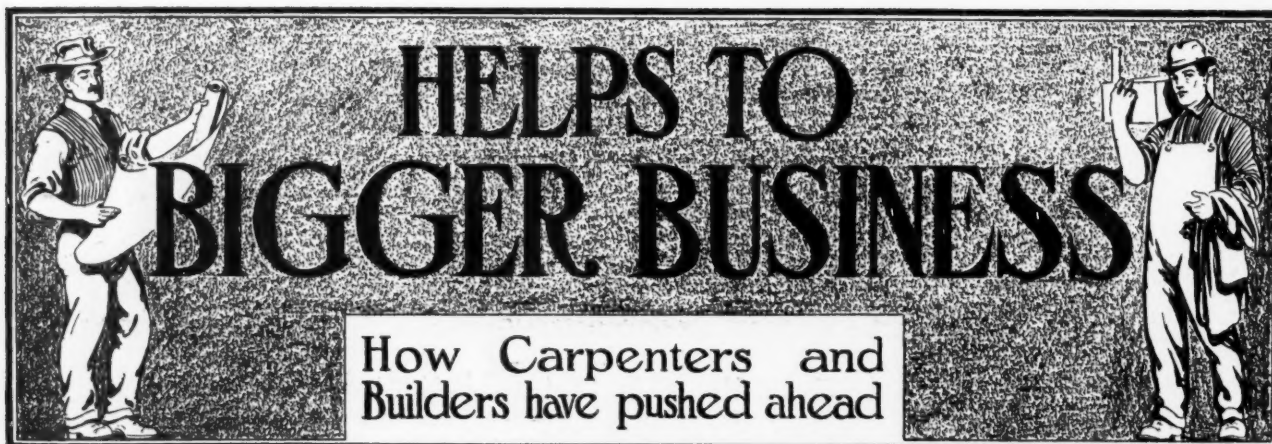
opportunity to prove what he has long claimed in regard to electricity as an assistant to house building.



Ideal Contracts are Rare

"In putting a price upon any sort of work one realizes that there is a price at which under the most favorable conditions one can do the work," remarked Mr. Leonard C. Wason, President of the Aberthaw Construction Co., Boston, in a recent paper.

There are contingencies which arise in the course of a job which are not included in the ideal program. Some of these can be removed by foresight and good management, others seem to come under the class of "unavoidable." The bidder must not only decide the cost under average conditions, but must judge whether the conditions of the proposed job are average or special. He must balance the probabilities of unforeseen circumstances and decide how narrow a margin he dares to leave between the actual possible cost of the work and a living profit. The wisest heads are not commonly those who disregard difficulties.



Advantages of Fall Building

If building activity is allowed to take its own course, the work of the year runs too uneven—everyone wants his building done up all in a rush in spring and summer, leaving little to do the rest of the year. There are sound reasons for fall and winter building; TALK them and your business for the next five months will be greater.—Editor.

"IT is getting rather late in the season so I have about decided to put off building until spring."

This in substance is a statement frequently heard by those in the building business at this time of the year—a time most favorable of all seasons in which to build. This feeling accounts for the fact, to a large extent, that work is congested and expensive during the spring and summer.

A man will have his foundation put in so early in the spring that there is real danger of its being frosted, still the bugaboo about running into cold weather often prevents him from putting in the foundation during the early fall, when all conditions are favorable, allowing the contractors to finish up the balance of the building at their leisure.

There are four good and practical reasons for building in the fall and winter.

First. An early start means possession of the house a number of months ahead of those who start building in the spring, which saves just that many months' rent. Taking one man as an example and assuming that he is paying \$50 a month rent and is constructing a home, which in the spring of the year would cost \$5,000, he would probably save about seven months' rent or \$350.

Second. He would save considerable on the cost of the home. The average contractor, the man who keeps five or six jobs going at one time, is always desirous of keeping the foremen to those jobs employed during the late fall and winter that he may have them in his employ when he most needs them during the spring and summer; and it is no uncommon thing to see four or five men who work as foremen in the summer used by their employer as regular carpenters all on one job during the winter. These men have a deeper interest in the work than those who come and go, can work faster and better. This

means a saving in cost to the contractor.

The same condition confronts the mill man from whom the contractor buys his mill work, so that the mill man can turn out a little better grade of mill work at a lower cost.

The same thing is true with reference to all building materials. Last winter cement went down to less than ninety cents a barrel in large quantities. Iron and glass were also proportionately below the average market; and while no one can tell to a certainty just what the low mark will be each fall and winter, this fact is known, that prices on building materials do go down, as the popular building session draws to a close. The result is that the man with an eye to business, who takes advantage of this situation, is able to save from 6 to 8 per cent or, about \$350 on the average \$5,000 home.

The writer has known many instances where the saving has been considerably more than this, but taking \$350 as a conservative estimate and adding it to the \$350 saved on rent, means that Mr. Home-builder can save \$700 or more; the actual amount varying more or less according to what rent a man pays and what the total cost of his house is expected to be.

Third. He obtains better work. As already mentioned the contractor can have his pick of workmen, the same being true in all the factories where building material is made and where only the best and most efficient workmen are carried through the winter.

Last fall and winter the writer had the pleasure of superintending the construction of a home on which three mason foremen built the foundation and did the plastering. Four carpenter foremen and an expert interior wood finisher did all of the carpenter work; and one of the very best painters in the city did the painting and interior finishing. He was a

man who for many years had been a foreman in the paint shops of the Pullman car company, and since he wanted to keep himself employed he did all of the work himself without engaging any assistants, with the result that the interior wood finishing on that home is the envy of all home builders, who have seen it. The mill work was the best of its kind that the writer had seen during the entire building season, and everywhere bore evidence of care and good workmanship.

Now this is not an expensive home. It was just an average square house 28x28 feet, and the contract price, including both heating and plumbing, was \$4,500, and included a large porch in the front and entry and small porch in the rear, with a large sun room extension from one side. Had the contract been let for this house in May or June of this year it would have cost at least \$600 more. The contractor frankly stated that he was not making anything on the job but had taken it to keep his good men employed.

Fourth. There is no delay in getting materials or men at any time. During the summer it is very aggravating to see a crew of good men let off when you know that it will be impossible to get them back again and a few days later have to engage an entire new crew, all because of several days' delay in getting certain building materials. Still this is a very common occurrence and frequently occurs several times during the construction of a home in the busy season.

The conclusion is that the fall is a cheaper, better and more practical time of the year in which to build and has been so found by all those who have the business foresight to take advantage of natural conditions toward the close of each year.—Arthur C. Clausen, Architect.

Furnace Experts, Attention!

WE wish to announce the beginning next issue of a department of PRACTICAL HEATING HELPS. We are counting on you who are most experienced in furnace heating matters to come forward with some good helps and pointers on this important branch of work.

We want short, practical articles from men who know what they are talking about. We will pay well for them. We want narrations of personal experiences at installing WARM AIR FURNACES, STEAM HEATING SYSTEMS, HOT WATER SYSTEMS and any other used heating methods.

Make them short and to the point—each one telling of a difficulty overcome. Send rough sketch or photo.—Editor AMERICAN CARPENTER AND BUILDER.

To keep the  coming in during the winter months.

Here's a Chance to Do a Good Turn

ARE you able to keep busy right through the cold weather? Yes? Then how do you manage it? Many of your brother builders are not so lucky; they have not been able to get just the right combination, and often find their supply of hard, round, iron dollars cut down just when they are needed most.

FOR the benefit of these—to give some suggestions that might help other carpenters and builders at this season of the year—won't you kindly write us a letter telling what you have found out about developing and handling spare-time sidelines.

WE want a flood of good, practical letters from practical men. Don't mind if they aren't models of rhetorical composition; if they contain the Real Goods, that's all we care. Carpenters and builders want to know how they can keep busy all the time—winters same as summers; and if you will write out simply and clearly some of your own experiences with spare-time work and winter work, you will be helping some other builder and at the same time have the chance of winning a nice Cash Prize for yourself.

In order to encourage a full and free discussion and interchange of ideas, we offer a number of \$10.00 First Prizes and \$5.00 Second Prizes for the most helpful and sensible letters on winter work for Carpenters and Builders. If you have been up against the part-time problem and have mastered it, won't you write and tell us just how you did it?

No able bodied man can afford to loaf around even "part time." He owes it to his family and to himself to turn every hour to account.

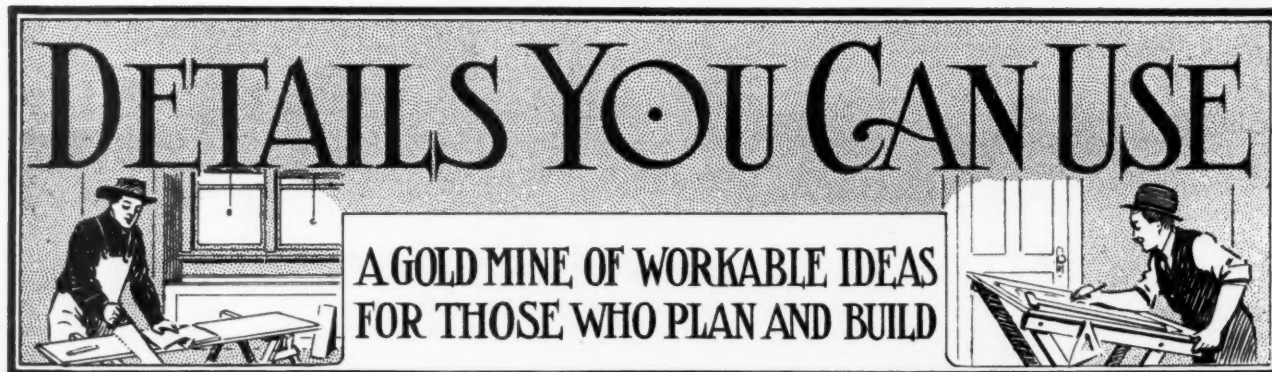
SOME builders have *snug woodworking shops* where all kinds of cabinet woodwork can be made. Some build handcraft or *Mission furniture* and find it has a ready sale. Some *build boats* in the winter time—row boats, canoes, and motor boats—and have no trouble selling all they can make, at a good profit. Some do a regular planing mill business during the winter, making up in advance, for future use, all sorts of standard frames, sash, cabinets, etc.

Some carpenters and builders (both young and old men) welcome every spare moment and these long winter nights as just the time to *read and study* practical building and architectural books and so fit themselves for better work and bigger earnings. Some employ any spare time they may have in the winter season getting around among the people and *talking up new building projects* for spring; drawing up plans, showing plan books and building magazines,—and so investing this time to their future profit.

These ways and dozens of others are good. What is *your* way? and what have been your experiences?

THERE will be as many prizes as there are different branches of the subject discussed. Write a good, helpful, practical letter and we will do our part toward keeping the money "coming in during the winter months."

Write your contributions out *at once*. It must reach this office at least by Oct. 15th to appear in the Nov. AMERICAN CARPENTER AND BUILDER. WRITE TODAY AND HELP A FRIEND. Address Editor AMERICAN CARPENTER AND BUILDER, 178 W. Jackson Boul., Chicago.



A Common-Sense China Closet

PHOTOGRAPH AND COMPLETE DETAILED WORKING DRAWINGS TO SCALE OF WELL DESIGNED ROOMY CHINA CLOSET APPROPRIATE FOR KITCHEN, BUTLER'S PANTRY OR DINING ROOM

SHOW the average woman a set of house plans and she will condescend to give the parlor and sitting room and entrance hall and all the rest of the front of the house just a casual passing glance, and then will settle down in real earnest for a study of the kitchen arrangement.

Usually, too, (let's be honest about it) the kitchen and pantry don't suit her at all. She finds all kinds of fault with them, and insinuates sharply that they were evidently drawn up by *some man* who didn't know anything about housekeeping or what is needed in the working end of a modern family domicile.

Like as not Mrs. Housewife has modern notions and doesn't want any pantry at all. Wants just a big built-in cupboard or kitchen cabinet.

Humor her, let her have what she wants. It doesn't cost any more, and you can use the pantry space to advantage somewhere else.

But even when there is wanted a pantry of the old fashioned kind and size, an attractive china closet—roomy, dust tight, and unobtrusive, will be wanted. Maybe there is a place for it in the kitchen, perhaps in the butler's pantry or in the dining room itself.

A china closet of the design illustrated here is sure to please. It is conservative, nice appearing, but not overdone. Its cost would be reasonable.

The closet illustrated was built out into the room, projecting its full width.

Evidently it was added after the partition was built. If the builder knows just where the china closet is to be wanted, he can very easily frame his partition to make room for fully half the width of the closet inside the partition wall. This saves some space. It used to be the thing to build a china closet this way and have it open from both sides; not a very practical arrangement, however, as experience has proved. Many pieces of china and glassware like to be stood on edge as they should have solid back paneling to lean up against.

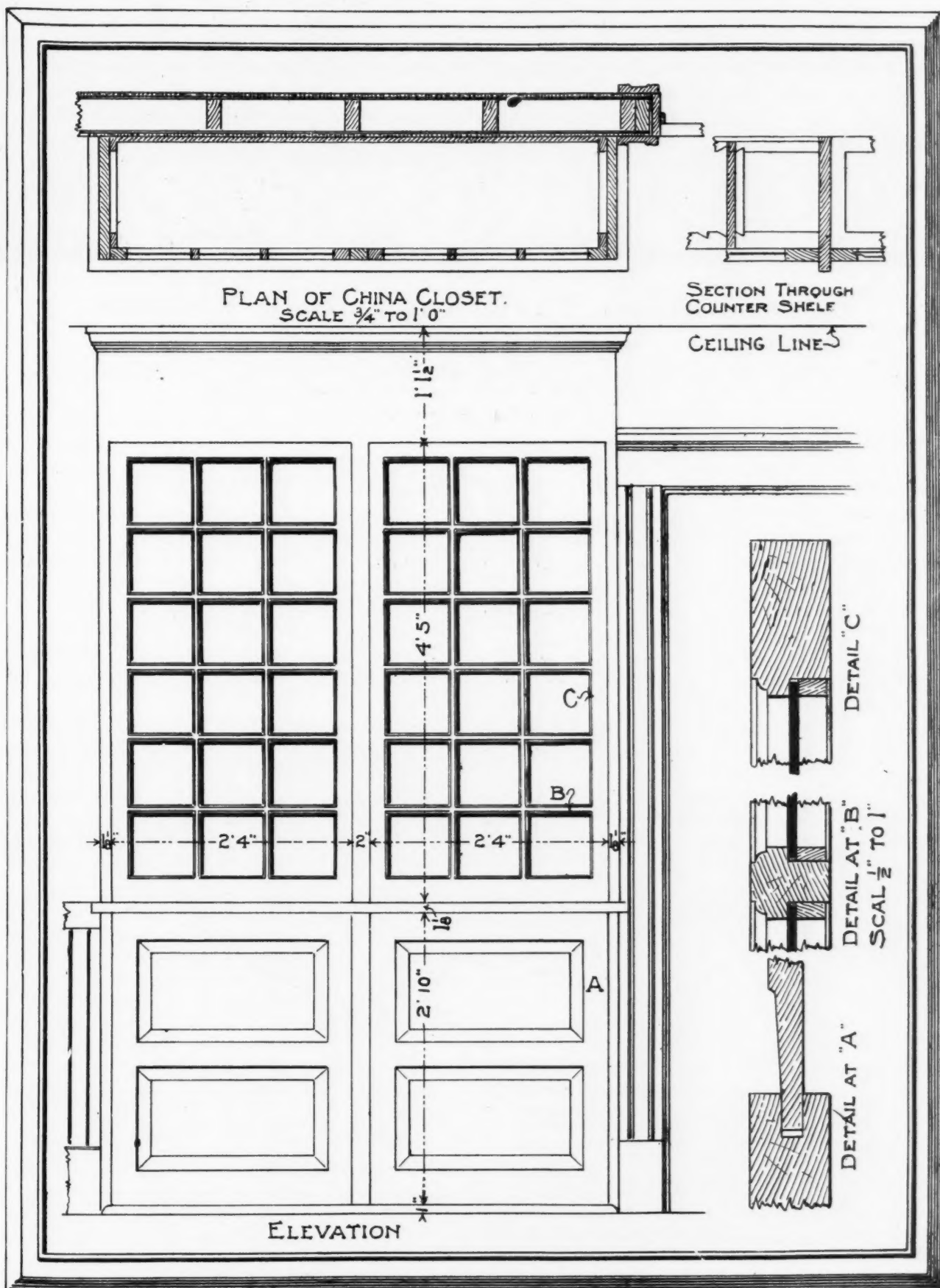
Whatever else you do in the building of a china cupboard, see that it is sealed in tightly at bottom and top and all around the sides and across the back. Make it mouseproof and dust-proof, if there is such a thing possible in carpentry construction.

A good little trick for discouraging the mice is to build the shelves in the lower case clear back solid against the rear wall. Loose shelves permit the small rodents to climb up behind from one shelf to the next. It costs only a moment's time to fasten the shelves solidly in place.

One kitchen china cupboard, we saw recently, was designed very similar to this. And it had an extension shelf (a narrow one) placed just below the bottom board of the upper case—a very handy place to set dishes temporarily.



View of Finished China Closet



DETAIL DRAWINGS OF CHINA CLOSET SHOWN ON OPPOSITE PAGE



School-Room Partition Doors; Pivoted Transoms

ARRANGEMENT OF PARTITION DOORS HEAVY ENOUGH TO CARRY BLACKBOARD PANEL—COMPLETE DETAILS—RECOMMENDED PRACTICE FOR PIVOTED TRANSOMS

By Our Hardware Expert

THE September number showed illustrations of accordion folding doors.

We show herewith, in Detail No. 24, four sliding doors, all of which slide back into one pocket.

You will notice that this scheme is to take the place of accordion folding doors, dividing a large room into two or more smaller rooms.

This is especially desirable if these partition doors are required for additional blackboard space.

This device is in common use in the Chicago public schools, and is being installed in many of the schools in the larger cities.

The accordion folding doors are much lower in price; but price does not count when a perfect up-to-date device is wanted.

Any number of doors can be used. If you have the space for a pocket in the opposite wall you can slide some of the doors into same.

If it is desired to hide these doors, a panel can be placed in front of the doors when same are back into the pocket.

This panel can be hung on Soss invisible hinges and a very satisfactory job is obtained.

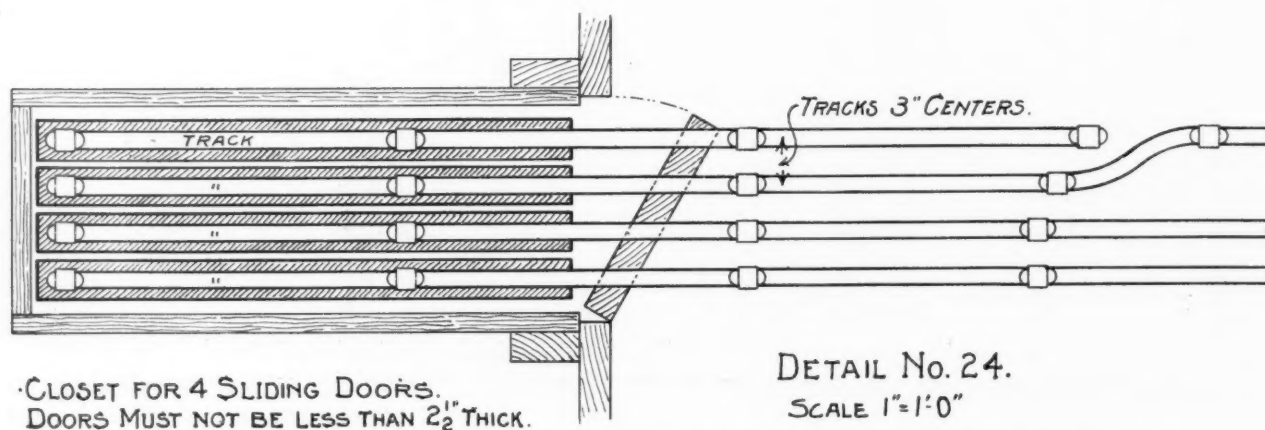
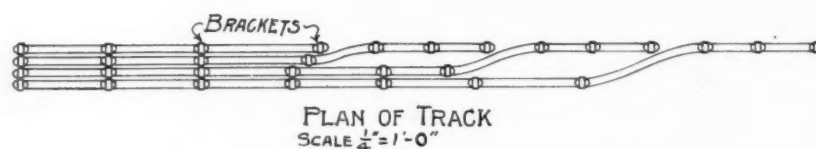
Detail No. 25 is of interest to architects, millmen, contractors, hardware men, and especially to the occupant of the building. Every one now-a-days wants fresh air and plenty of it.

The store keeper, the factory and the school master depend largely on windows and transoms for ventilation.

Many of the high priced buildings are ventilated with a blower system and an exhaust system to supply the proper amount of fresh air.

When a great many people are housed in a building, these systems are required.

Physicians are becoming more insistent all the time



Detail No. 24. Plan View of Tracks for Four-door School House Partition Heavy Enough to Carry Black Board Panels; With Detail View of Pocket for Doors to Slide Back Into

for a greater supply of fresh air.

People are awakening to the fact, that, if you would be healthy you must have fresh air. Not one store or factory in a hundred has mechanical ventilation. They must depend on windows and transoms, because the cost of mechanical ventilation is excessive.

Detail A, Detail 25, shows a typical rabbeted jamb for a 1 $\frac{3}{4}$ -inch outside entrance door.

The millman continues this rabbet for the door the full height of the frame, including the transom.

Detail B shows this jamb above the transom bar with this rabbet filled in with a strip of wood $\frac{1}{2}$ by 1 $\frac{3}{4}$ inches. It also shows the transom in place.

The transom is $\frac{1}{2}$ inch shy on all four sides.

This detail shows a strip of wood $\frac{1}{2}$ by $\frac{7}{8}$ inch, nailed to the jamb. Continue this strip, attaching it in the same manner to the transom bar.

This detail also shows a strip of wood nailed to the sash. Continue same, attaching it to the bottom of the sash.

This detail shows these strips of wood below the pivot.

Detail C shows an elevation of the*pivot in place, illustrating the application of these strips of wood.

Mr. Architect, it's up to you to show this detail C in your drawings, so the millmen and the carpenter will know just how to go about it.

The millmen and carpenter are not interested in fresh air; they are interested in turning out the work in the least time, and at the lowest cost.

This is why you will get a hinged transom.

A hinged transom cannot be opened more than 45 degrees; most of them do not open more than 30 degrees because the standard transom lifter as supplied by all manufacturers will not properly operate a transom of different heights.

A transom 18 inches high can be properly operated and opens 45 degrees with the standard lifter.

It stands to reason that a 48-inch transom cannot be properly operated with this same lifter.

Manufacturers of lifters can (but do not) make lifters which will do the work satisfactorily for hinged transoms.

Mr. Architect, if you are a fresh-air fiend and believe in supplying more air, you must adopt the pivoted transom, and Detail C is the cheapest and best method of making a weather tight job.

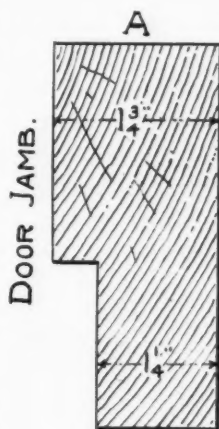
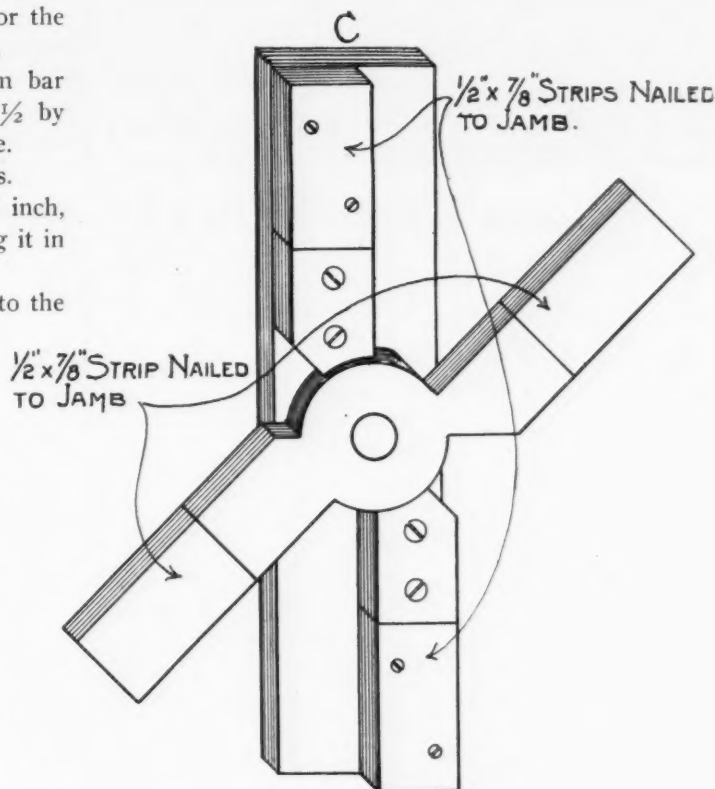
You can open a pivoted transom 90 degrees, and standard transom lifter can be applied by the carpenter to open any degree up to 90 degrees.

There is no weight on the lifter; any child can easily operate it. When the transom is open 45 degrees or

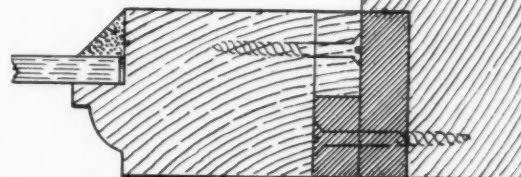
less it will shed the rain.

This is particularly desirable for transoms over windows in the outside walls of a factory, store, school, church, theatre, or any kind of building where a great amount of fresh air is desired.

If a transom lifter cannot be easily applied to these transoms this same sash center can be obtained with



DETAIL No. 25.
SCALE ONE HALF FULL SIZE



Detail No. 25. Horizontally Pivoted Transom

a friction device in it which will hold the sash in any position.

Now, I hope, and trust that I have convinced my readers that the pivot transom is the only transom which should be adopted for use when a greater supply of air is needed.

We cannot have too much of a good thing.

The best thing in the world is fresh air, and the best thing in the world costs not a red cent.



Noon Hour Talks by the Boss Carpenter

Talk No. 3

THE BOSS TELLS ABOUT SHEARING STRESSES IN BEAMS

AT noon on the third day after the formation of the "calculating squad," the Boss and his followers met as usual, ready to proceed with their calculation on the strength of beams.

While the men were lighting their pipes and making themselves as comfortable as possible on improvised seats in the shade of the small building, the Boss had spread out his "log book" and was busy drawing the rough sketches shown in Figs. 4, 4a and 5. When he had finished, he placed the book vertically on a narrow shelf nailed across two of the legs of a roughly made tripod and arranged so that the men could see the figures while he talked.

"Before we begin today," said the Boss, "I would like to know just how many of you fellows are doing any work for yourselves on this matter. How many

correct in all details. The Boss told him that he would be glad to do so, and thought that the plan was a good one, since it would tend to give the man confidence in his own calculations in the future.

"Today," said the Boss, "I want to take up a new side of the beam proposition with you. We have determined a size for our beam, or joist, which will be safe against failure by bending, and which will be sufficient to prevent an injurious deflection or sagging in the joists. There is one other test for our joist, and that is to determine its degree of safety against failure by *shearing*. Now, the term *shearing* is used to indicate a sliding or cutting-off action between or in the fibers of a material. You all know that the cutting action of a pair of shears is due to the action of the face of one blade sliding across or by the face of the other. Just so in the case of a beam. If you were to draw two chalk lines on the side of a beam which rested on two walls, as shown in Fig. 4, and then pushed downwards on the top of the beam, as indicated by the load shown in Fig. 4, the tendency would be to cut off the beam at a section between the two walls, and cause it to slide downward between the two walls, as shown in Fig. 4a. In other words, the two cross-sections of beam represented by the chalk lines would tend to slide past each other, and the result would be a *shearing* or cutting-off action in the fibers between these two sections. Now, men, this particular kind of shear is called *vertical shear*, because the action takes place in a *vertical* direction. There is also another kind of shear present which tends to cause a sliding action along the fibers of the wood. This is called *horizontal shear*.

"The general rule for finding the total amount of vertical shear at any cross-section of a beam or joist is as follows: Consider the pressures felt by the walls or supports under the ends of the joist as forces which act upward, and that the loads on the joist are forces which act downward. In a simple beam with only two supports, each support is equal to one-half the total load on the beam in the case of a uniformly dis-

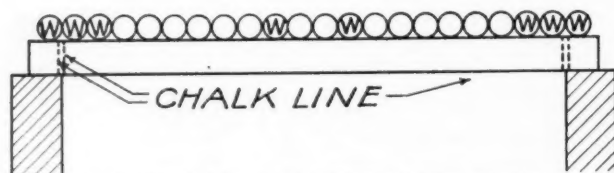


Fig. 4. Loaded Beam with Chalked Cross-Sections

of you have tried a problem to see just what you could do supposing that you had a different floor load, or a different spacing of beams to handle?"

Two of the men said that they had tried problems similar to the one explained in the previous talks, and had checked the values in their computations, each

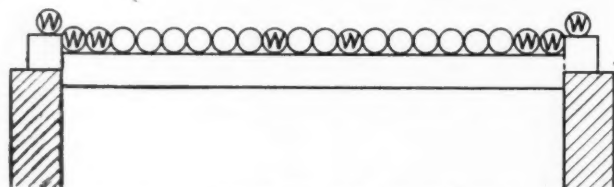


Fig. 4A. Showing the Tendency to Slide, or Shear Due to Load in Fig. 4

working entirely by himself. One of these men asked the Boss if he would mind checking over the calculations in order to be sure that the method followed was

tributed load on the beam, and also in case there is only one single load placed at the middle of the beam. If the load is not at the center, or is not uniformly distributed along the length of the beam, then one support will feel more pressure than the other, just as two boys carrying a pail of water on a pole will carry different amounts according to the location of the pail along the pole. Then, add together all the forces which act downward and lie between one support and the given beam cross-section which you are considering, and subtract their sum from the value of the supporting force on the end where the loads were taken. The result will be the total vertical shear at that particular beam cross-section.

"For example; we had a uniformly distributed load of 800 pounds on each one of our 2 by 10's in our problem. This would make each wall pressure, or supporting force, equal to 400 pounds. If we were to look for the total vertical shear at a section 3 feet from the left hand end of one of our joists, we would have a downward force equal to the load on a piece of beam 3 feet long. This would be $3 \times 1\frac{1}{3} \times 40$ pounds, or 160 pounds, where 3 is the length in feet, $1\frac{1}{3}$ is the width of floor in feet which is supported by one joist (16 inches centers), and 40 is the load per square foot of floor. Our rule would then give us a total shear equal to 400 minus 160, or 240 pounds at this section.

"If we were to make a similar calculation for a beam section at a distance of 2 feet from the left hand end, we would have 400 minus $2 \times 1\frac{1}{3} \times 40$, or 293 $\frac{1}{3}$ pounds as the value of the total vertical shear at this section. Thus we see that the total shear grows larger as the end of the beam is approached, and smaller as we go towards the middle of the length of the beam in our problem. The greatest value of the total vertical shear would then be at either end of the beam in case the beam carried a uniformly distributed load or a single central load, and would be equal in value to one-half the total load on the beam.

"That rule would tell us that the value of the vertical shear was zero at the center of the length of our beam, wouldn't it Boss?" asked one of the men.

"It would in the case of our uniformly distributed load," said the Boss, "but in the case of a single central load the shear would be of constant numerical value on each side of the center and equal to one-half of the total load, merely changing in its direction of tendency to slide as we pass under this load in the

center of the beam. You can see this easily by drawing a figure like Fig. 5, and then covering up the right hand side of it with a card. The support would tend to push the beam upward with a force equal to one-half the central load until you had slid your card along the beam and passed the central load. Then, since the central load is larger in amount than the supporting force at the wall, the shearing action would

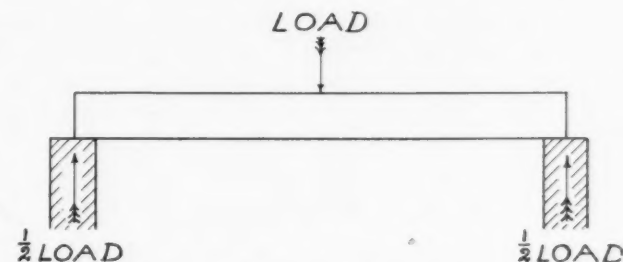


Fig. 5. Force Diagram for Determining the Amount and Direction of Shear with Single Central Load

reverse in direction, but would still be of the same numerical value as it was before.

"After we have found the greatest *total* vertical shear," said the Boss, "we next want to find our greatest *unit* vertical shear to use in testing our beam calculation. The study of mechanics proves to us that the greatest unit vertical shear in a beam cross-section is equal to $\frac{3}{2}$ of the average unit vertical shear at that cross-section. The *average unit vertical shear* is equal to the total vertical shear at that cross-section divided by the area of the cross-section.

$$S_{\text{(unit vertical shear, in)}} = \frac{J_{\text{(total vertical shear, in pounds)}}}{A_{\text{(area, in square ins.)}}} \quad (\text{Formula No. 3})$$

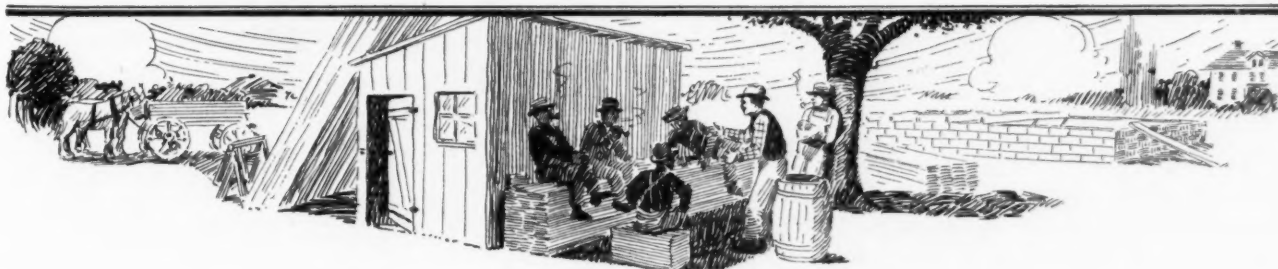
"Let us apply this formula to our problem and see what the result will be. J for our problem has one-half of the total load, or $\frac{1}{2}$ of $800 = 400$, for its greatest value. A is equal to $2 \times 10 = 20$ square inches. Then the average unit vertical shear at the section which is in *most danger* of failure by vertical shear is

$$S = \frac{400}{20} = 20 \text{ pounds per square inch.}$$

"Applying the rule that the greatest value of any unit vertical shear at this particular cross-section is $\frac{3}{2}$ of the average, we have

$$S_{\text{(maximum)}} = \frac{3}{2} \times 20 = 30 \text{ lbs. per sq. in.}$$

"If you will look in your hand book, such as your Cambria Steel Company book, you will find that a safe working shearing unit stress for yellow pine (across the grain, as you see it must be, from the way



the beam is placed), is given as 1,000 pounds per sq. in.

"Thus we see that there is no need of worrying about our joist failing by vertical shear, or cutting off where it is supported on the walls. When we reach our calculation for shearing tendency *along* the fibers instead of *across* them, we will see that we have not such a large number for a margin of safety, since the allowable working strength in shear *along the grain* of the wood is only about 100 pounds per square inch.

"Is there any way that will show us when we had better look out for danger of a shearing failure?" asked one of the men.

"Yes," said the Boss. "After I have told you about the general method of finding the horizontal unit shear,

or the sliding action along the grain of the wood, I will give you a simple rule which will cover this point. But, I want you to understand what you are handling, so that you will see what this rule really means.

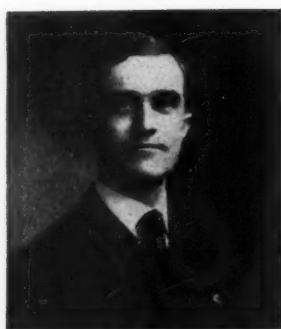
"Now, let us examine this other shearing condition that we just spoke about."

At this point of the talk the sound of a saw notified the "squad" that the rest of the crowd was back on the job again, and that the noon hour was at a close. "Too bad," said the Boss, "but we will have to finish this matter tomorrow. Try out a problem tonight which will carry you as far as we have gone, and bring it with you tomorrow. Your knowledge is of no use to you unless you can apply it to your work."

"The Motorcycle, Its Use and Abuse"

By A. B. Coffman

President Motorcycle Manufacturers' Association



A. B. COFFMAN
President Motorcycle Manufacturers' Association

IF all the uses of the motorcycle could be placed in one pile and all its abuses in another, the first would resemble a good sized hill and the latter wouldn't make an ant a respectable home, for although there is a right and a wrong way to ride any vehicle, the motorcycle out-ranks them all by its many uses, and its abuses

are almost nil.

The motorcycle unlike many means of locomotion is filling an actual need in almost every commercial line and for recreation and pleasure its uses are unlimited. The motorcycle has made an appeal to all classes of men and in all lines of business and responds to every requirement no matter how large or how small.

In many cities the motorcycle has become a cog in the wheel of successful city government of progressive and up-to-the-minute recreation. It embodies economy, convenience, comfort, reliability and speed. It is used by the federal government, state departments, city police, fire engineering and building squads, doctors and laborers, ministers and lawyers, farmers, business men and rural mail carriers, and they're all enthusiastic riders.

The value of the motorcycle to the government is shown by its adoption by three departments—Navy, Interior and Postal. In the Navy Yard at Philadelphia, in the Reclamation Service in the west and in the post offices in most all large cities the motorcycle men are practically indispensable.

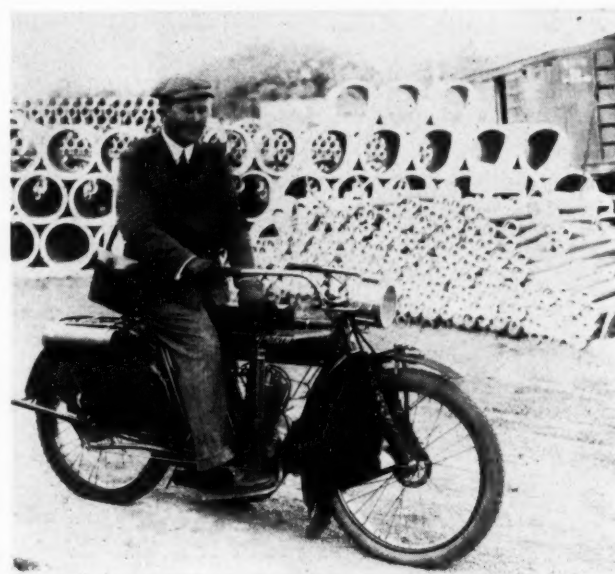
These uses of the single tracker are analogous to those in the city government. The police departments have the motorcycle so as to dispatch officers to the

scene of a crime or accident with the least delay. In this manner the "outskirts" of the cities have been brought within a few minutes of the city halls. The fire departments send the motorcycle firemen to the conflagration in advance of the fire fighters so as to hastily acquaint them with the situation in advance of the arrival of the wagons. The engineering and building departments also have their motorcycle officials.

Public service corporations, too, such as telephone and telegraph companies, consider the motorcycle among the most valuable of their equipment.

Even the call "back to the farm" has been heeded by the single tracker. And the rural mail carriers, too, who ride motorcycles not only save as much as \$20 a month and several hours each day but they deliver the farmer's mail much earlier in the day.

Because of its recreational uses the motorcycle has the largest number of "first hand" enthusiasts in the world. It can take anyone anywhere at any time.



Samuel Cassidy of the Contractors' Supply Co., Springfield, Mass., Covers a lot of Ground Every Working Day.

Just a twist of the wrist and the rider is on his way to any part in the city, across the state or from coast to coast.

While the motorcycle is used daily, both in winter and summer in all these callings the season of 1912 will see an extension of its uses for its many virtues have made it the modern mount for the ordinary man

to make an inch in thickness. Here is an interesting problem for those who like to figure out things, to take a pencil and figure out how many feet, surface measure, of veneer cut in this thickness with a rotary machine can be made out of 500,000 feet log measure of Spanish cedar.

Even what is called the thicker cigar box lumber is



D. N. Gallagher, Contractor and Builder, Syracuse, N. Y. on his Busy Two-Wheeler. He Finds it Absolutely Necessary to use a Motorcycle in Looking After his Building Business

and although some riders may ride with the muffler open and speed over the city thoroughfares the F. A. M., 16,000 strong, is after them, and while there may be some riders who will continually abuse motorcycling they will constitute such a small minority as to be practically unnoticeable.—Toledo, Ohio.

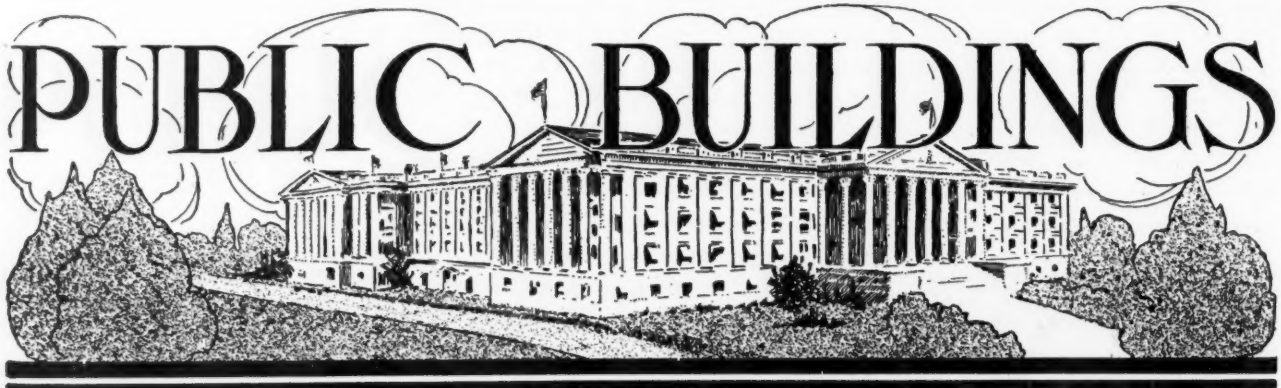


The Thinnest Veneer

The thinnest veneer made in commercial quantities and in a general commercial way is the veneer made from Spanish cedar into stock for veneering cigar boxes. There are used in this country approximately 5,000,000 feet of Spanish cedar annually for the making of cigar box lumber and cigar box veneer. Approximately 500,000 feet of this is cut into veneer of which it takes 100 sheets to measure an inch in thickness. Some of it is cut so thin that it takes 110 sheets

as thin as the average thickness in veneer. About a million feet of Spanish cedar per year is cut into $\frac{1}{2}$ inch in thickness and between $\frac{1}{4}$ and $\frac{1}{2}$ a million is cut $\frac{3}{16}$. These are the standard thicknesses for cigar box lumber, taking the industry as a whole. When it comes down to the real thin stock this is getting it down pretty fine and this thin stock in veneer cut 100 to 110 to the inch is used for covering poplar and gum cigar box lumber so as to make it have the appearance and some of the aroma of Spanish cedar. The finished stock then is about $\frac{1}{8}$ to $\frac{3}{16}$ in thickness. No big hydraulic presses are used for this veneering either. The veneer is simply spread and brushed out and the stock piled up one on top of the other to dry.

THE people who will not understand outnumber the ones who cannot understand, about ten to one.



Practical Design for Country Church

PERSPECTIVE AND FLOOR PLAN OF METHODIST CHURCH BEING ERRECTED AT WATERMAN, ILL.

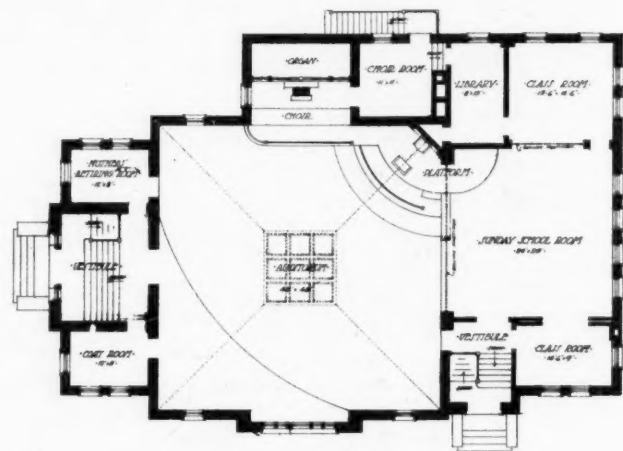
A STUDY of the accompanying plan of this church building which was designed by the well known Chicago architect, G. W. Ashby, to be built at Waterman, Ill., will disclose several particularly interesting and thoroughly practical ideas.

This church, which will total a cost of \$15,000 complete, but not including furniture, is affording in its coat room and mothers' retiring room practical comfort that any congregation—city, village or country—would well appreciate.

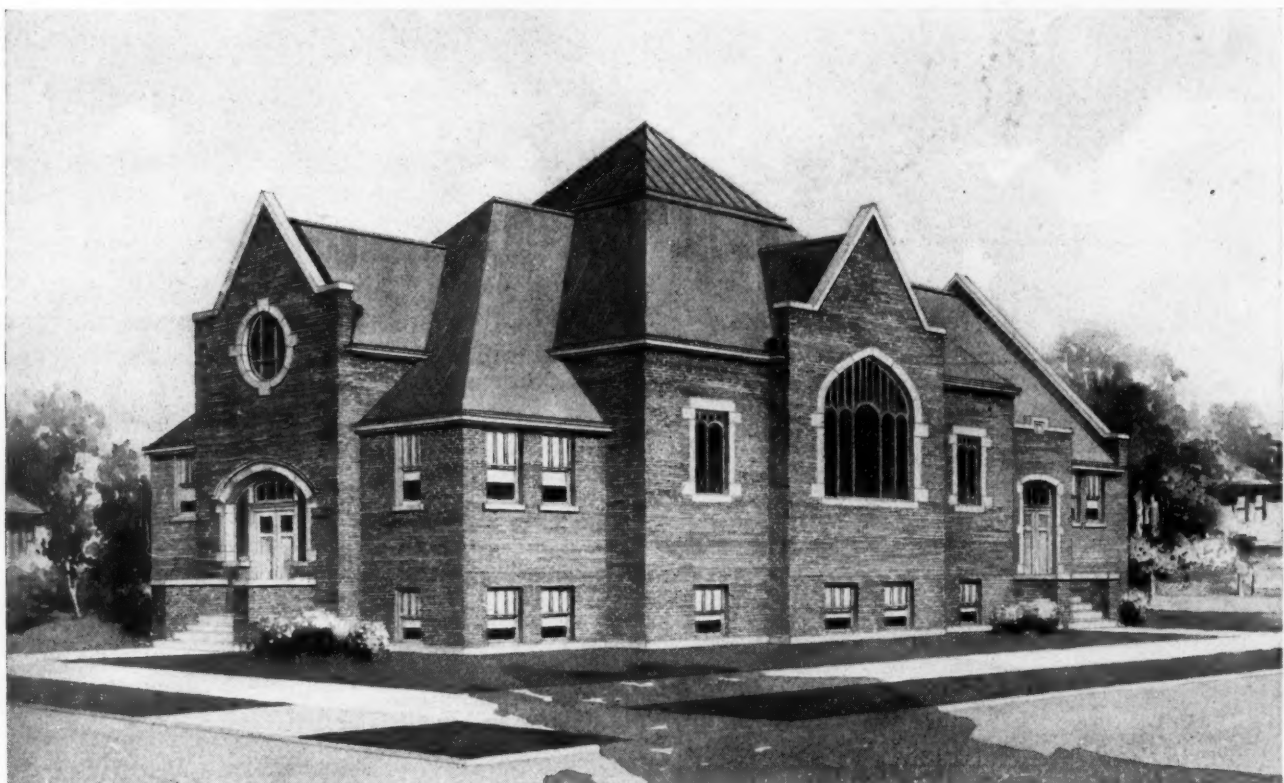
The auditorium of this building is of ample size and well lighted from both side lights and a center skylight.

Sunday school room, two class rooms, library and choir room are provided.

The exterior of the church will be red brick and white stone trimmings.



Floor Plan of Church



Church Building for Rural Congregation Being Built at Waterman, Ill.

Safety Provisions in Garage Building

WHAT THE BUILDING ORDINANCES OF VARIOUS CITIES SPECIFY. BUILDERS SHOULD FAMILIARIZE THEMSELVES WITH GARAGE REGULATIONS

WITH the ever increasing popularity of the automobile the question of its proper housing looms large. Everywhere there is a demand for garages both private and public.

With this feature of constructive work certain to prove a big factor it is but policy that architects, contractors and builders post themselves thoroughly upon the many various regulations demanded, by both Boards of Underwriters and city building ordinances for the building of garages.

The most widely adopted set of rules relates to the manner of storing gasoline. Practically all authorities agree that it is dangerous to store this explosive within the building in any quantity, and the underground storage arrangement is almost universally required. There is considerable variation as to the depth to which the storage tank of such a system must be buried, and also as to the thickness of the cement casing, if any, which must surround it. The regulations in some cities even go so far as to state the composition which the cement used must have.

Vent and filling pipes for these underground tanks have been given considerable attention. In most cities, the vent pipe must run up to a height at least 10 feet above the roof of the garage and it must be capped with a goose-neck or similar arrangement.

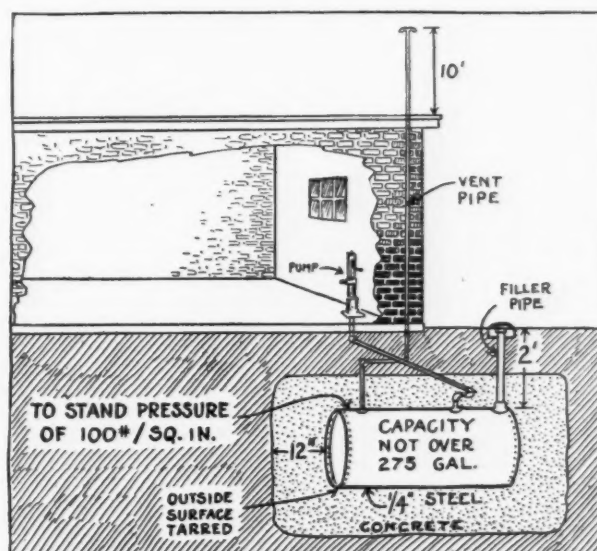
There are a number of stipulations as to the amount and manner of storing acetylene and lubricating oils. Much attention has also been given to the lighting arrangement. There are regulations as to the minimum distance from the floor to wall switches, incandescent bulbs, arc lights and electrical apparatus, such as motors and generators.

In NEW YORK CITY it is made unlawful for any person to store, house or keep within the city any motor vehicle containing volatile inflammable oil, except in a building, shed or inclosure for which a garage permit shall have been issued by the fire commissioner.

Gasoline storage tanks in New York must be constructed of steel at least $\frac{1}{4}$ -inch thick; they must have a capacity not over 275 gallons and must withstand under test a hydrostatic pressure of at least 100 pounds per square inch. They must be coated on the outside with tar or other non-rusting material, rest on solid foundations and be embedded in and surrounded by at least 12 inches of Portland cement concrete. This concrete must have the following composition: two parts of cement, three parts of sand and five parts of stone. The tops of the tanks must be set at least 2 feet below the level of the lowest cellar floor of any building within a radius of 10 feet of them. No tank can be placed under a sidewalk, nor in front of the building line.

Tanks must be fitted with filling pipes, draw-off pipes and vent pipes. The filling pipe must be at least 2 inches in diameter and laid on a descending grade from the sidewalk in front of the garage to the tank, and there are detailed provisions as to the closing of the intake when not in use. The vent pipe must be at least 1-inch in diameter and it must run from the tank to the outer air at least 10 feet above the roof of the garage, and at least 10 feet from the nearest wall of any other building.

As to the portable tank, the New York requirement is that it must not have a capacity over 55 gallons and must be mounted on an iron or steel frame having rubber-tired wheels. Gasoline may be discharged from the portable tank only through a hose not less



The Underground Gasoline Storage System as Required in the City of New York

than 16 feet in length, a shut-off valve being provided at the nozzle or outlet.

In receiving gasoline from the oil company, the garage is not allowed to admit the supply wagon within its building; the filling of the storage tanks must be done through the filler pipes from the outside. Oil cannot be stored in garages in New York in barrels under any circumstances. Provision is also made for the removal by sponging or swabbing of any oil which is spilled on the floor of the garage.

No system of artificial lighting other than incandescent electric lights is permitted by New York's Explosives Commission, except if the system be of a type for which a certificate of approval shall have been issued by the fire commissioner. It is further stipulated that all incandescent lamps be provided with keyless sockets, and that all electric switches and plugs be placed at least 4 feet above the garage floors.

The Board of Underwriters of CHICAGO orders

that gasoline tanks must be buried 2 feet below the surface of the ground, and as far from the building as possible, preferably not less than 30 feet. According to their rules, stationary tanks may be located inside garages, but they must have a total capacity not greater than 300 gallons when so placed. The thickness of metal of these tanks must not be less than No. 14 U. S. Gauge (5-64-inch) for capacities up to 180 gallons, and not less than No. 12 gauge (7-64-inch) for capacities of 181 to 300 gallons. The material must be of galvanized steel, open hearth steel or wrought iron. Tanks must be coated on the outside with tar, asphaltum or other rust-resisting material, encased in jackets of at least 6 inches of concrete and buried with their tops at least 2 feet below the upper surface of the concrete floor of the basement (or first floor in absence of basement). The filling and vent pipes of such tanks must be run under the concrete floor until they reach the outside of the outer wall of the building. The rules in regard to the vent pipes, filler pipes and draw-off pipes are identical with those which apply in New York.

Gasoline cans stored on holders attached to walls of buildings in Chicago must have an aggregate capacity not exceeding 10 gallons and they must be of approved safety type, supported by metal shelves having metal retaining guards, or metal boxes or metal lattice enclosures securely fastened to the outside surface of exterior brick, concrete or stone walls. More than 10 gallons of fuel may not be stored outside a building unless in the underground tanks already mentioned. As in New York, the Chicago ordinances state that if open lights are used, the rooms must be completely isolated from gasoline vapors. Calcium carbide, if carried in stock, must be kept in approved metal cans, while the rules for the storage of acetylene gas are especially restrictive. Acetylene tanks must be of approved design and not more than five can be carried in stock, exclusive of those on cars, if they are stored in the open.

The various methods of handling gasoline in the territory under the jurisdiction of the PHILADELPHIA Fire Underwriters' Association are made conditions of the rates for such risks, the lowest charges being made, of course, where no gasoline is permitted within a garage, except that contained in the tanks of the automobiles, where no filling is done within, and where the quantity of gasoline is restricted to a maximum of 50 gallons in an approved underground iron or steel tank located at least 10 feet away from the building. No artificial light is permitted in garages other than incandescent electric lighting installed in accordance with the National Electrical Code.

In ST. LOUIS the requirements of the Fire Prevention Bureau and of the city ordinances regulating garages are in accord. No building exceeding one story in height may be used as a garage unless it is a building of the first class. The floor must be either

of concrete or granitoid. If the building has a basement, the latter must not be used for the storage of cars, for repair-shop purposes or for storage of gasoline.

The St. Louis ordinance also requires that all electric motors and generators (not parts of any of the cars), be placed not less than 4 feet above the floor, that incandescent lamps be properly incased in vapor-tight globes and protected by wire guards, and that all arc lamps be of the inclosed type at least 10 feet above the floor. All switches and plugs must be placed at least 4 feet above the floor, to prevent sparks igniting oil on the floor.

Garages which have pumps within attached to storage tanks must inclose such pumps within special compartments or inclosures constructed of wire mesh screen. In filling cars, either portable safety cans not exceeding 5 gallons in capacity may be used, or portable tanks of 65 gallons maximum capacity having specifications similar to those required of this type of apparatus in New York. On entering a garage, all automobile lights must remain out within 10 feet of the threshold, and they must be extinguished until the car is ready to leave and is within 50 feet of the exit. Gasoline or other inflammable, volatile liquid can not be used for cleaning purposes, and the regulations as to sanded floors and fire buckets are similar to those in force in New York. Self-closing metal cans set firmly on 4-inch legs must be kept on every floor of a garage; one can for each 2,500 square feet of floor space. Into these all inflammable waste materials must be deposited.

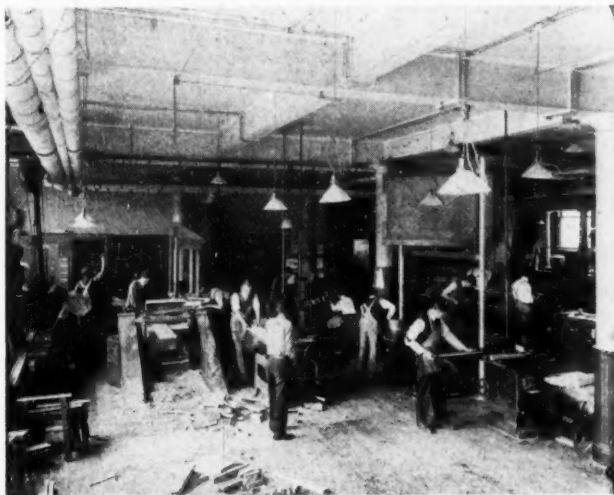
The building ordinances of MINNEAPOLIS state that whenever any floor of any building is used as a garage and the floors above are used for living or club purposes, the floor over the garage must be of fireproof construction and all stairways or openings leading from it to the upper portions of the building must be inclosed within fireproof walls. Doors in such openings must be fireproof also, and arranged to close automatically. No regular repair shop may be operated in connection with such a building, in any case. All garages in Minneapolis which are to be more than two stories in height must be of fireproof construction, unprovisionally.

The Minneapolis law relative to gasoline storage stipulates that not more than 10 gallons may be stored in any building. This must be in closed metallic cans, not exceeding 5 gallons capacity each.

From this survey of the ordinances and restrictions in effect in various parts of the country, it will be evident that much attention and consideration have been given to the facts that the increasing use of the automobile and the consequently great amount of gasoline and inflammable materials more or less carelessly stored and handled make the utmost precautions and the most rigid restrictions necessary in the building of garages.

Carpentry and Building at Pratt Institute

Pratt Institute of Brooklyn is well known as a technical and trade school of the very first rank.



Machine Wood Working Shop

Founded away back in 1887 by Mr. Chas. Pratt with an enrollment of 12 students, it has grown and developed until during the last year, its enrollment reached 2105 in the day classes and 1715 in the evening classes,

a total of 3820 students. During the twenty-four years of its existence more than 76,000 young men and women have been instructed there in useful knowledge.

One of the five divisions of Pratt Institute is the School of Science and Technology. One of the important courses is carpentry and building. It gives the student a thorough knowledge of the fundamental principles of the trade. Its aim is to give in a shorter time more efficiently the training which the old-time system of apprenticeship formerly offered.

The illustrations show two views of the carpentry shop, one showing the boys working on practical problems of house framing, and the other working with electrically driven wood-working machinery. This shop is equipped with lathes, jointer and surface planers, circular and band saws and other woodworking tools all driven by individual electric motors.

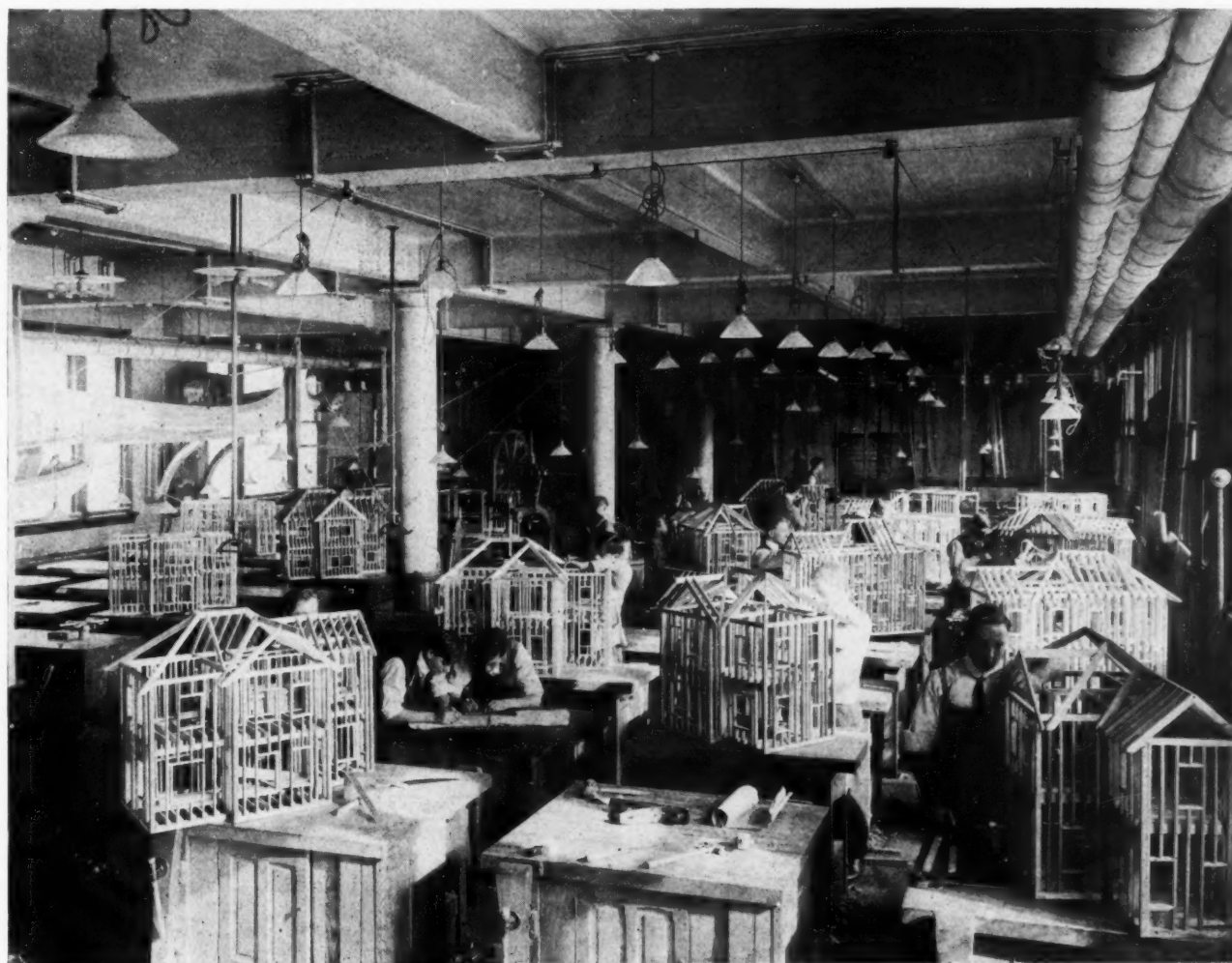


Nearing the Roof

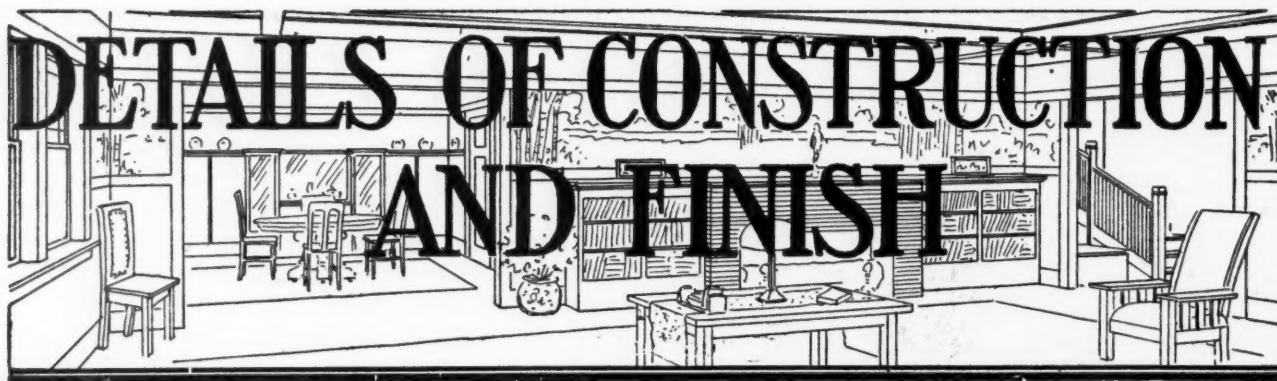
"I started to work on my twentieth story yesterday," said a busy looking man, "and I tell you I'm making it pay."

"You are an author?" suggests his neighbor.

"Certainly not! I'm an architect."



The Carpenter Shop at Pratt Institute Showing Models Built by Students to Demonstrate Roof Framing Principles



Novel Partitions for Living and Dining Rooms

SUGGESTIONS, WITH DETAIL PLATES, SHOWING HOW THE PARTIAL DIVISION OF LIVING AND DINING ROOM MAY BE SATISFACTORILY WORKED OUT

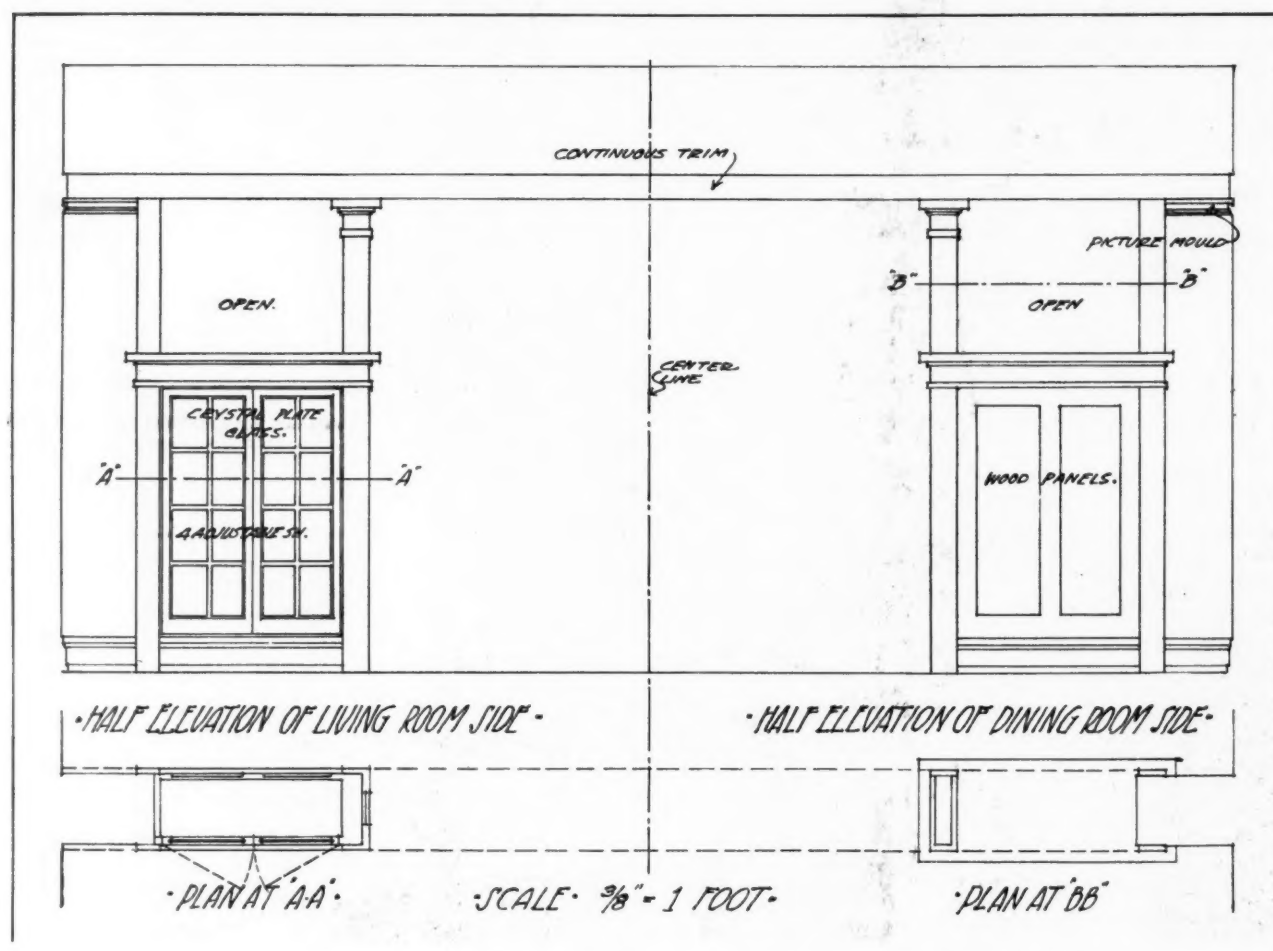
Detail Drawings By C. E. Schulze

WITH the prevailing idea of design and construction aiming to devote the greater part of the first floor to one large, comfortable, homey room there has arisen some need for a suitable partial division of this big room so that it would provide for both living and dining room.

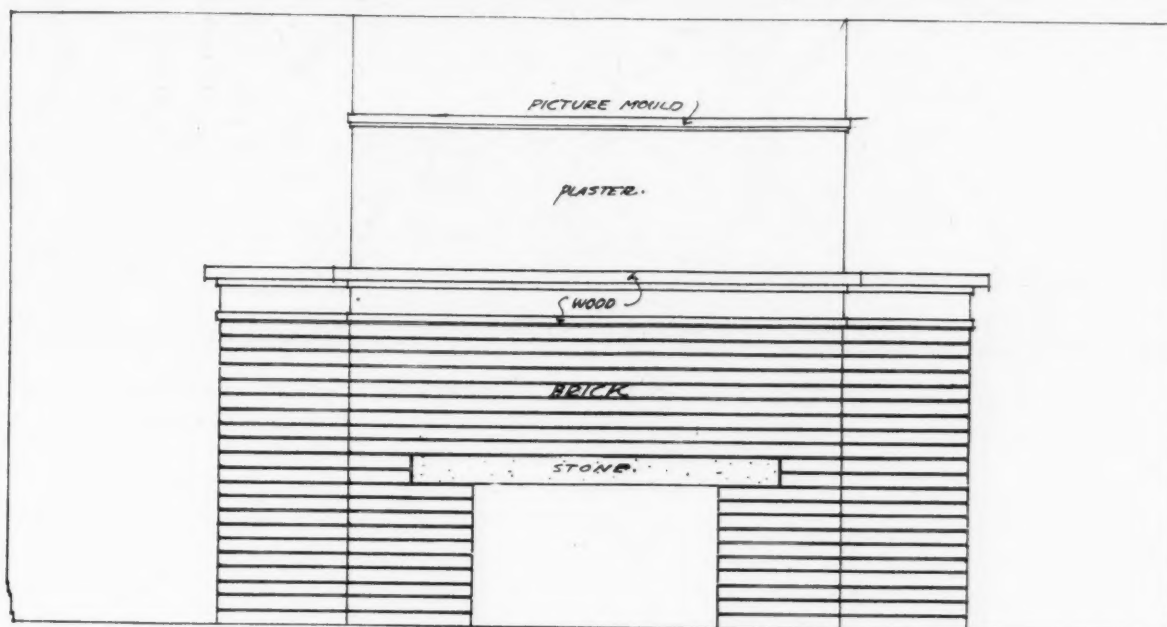
The first detail is that of a colonnade partial partition. From each side of the wall is built out a casing with open space between finished top and ceiling, and having glass cabinets on dining room side and wood

paneling facing living room.

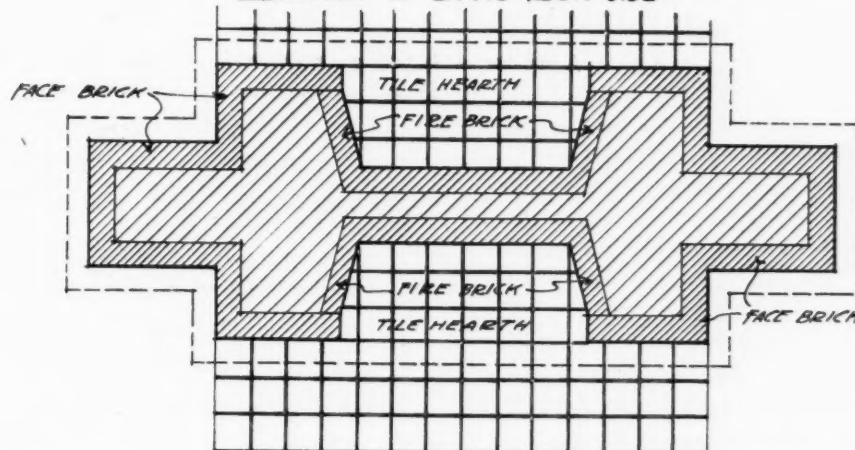
The second plate offers a double fire place suggestion. Fireplaces are built one facing dining room and the other the living room. These are in center, with open space around sides. Fireplaces are finished with face bricks, have wood mantels, tile hearths, etc. In the plate showing living and dining room no doors nor windows are given as they must depend upon special condition of room arrangement, etc. The ideas can be used in any residence.



SCALE DRAWINGS OF CHINA CLOSET COLONNADE BETWEEN DINING AND LIVING ROOMS



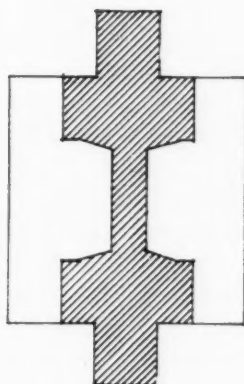
• ELEVATION OF LIVING ROOM SIDE •



• PLAN OF FIREPLACE •

SCALE - $\frac{3}{16}$ " = 1 FOOT.

• DINING ROOM END •



• LIVING ROOM END •

SCALE - $\frac{3}{16}$ " = 1 FOOT.

A NOVEL IDEA FOR FIREPLACE PARTITION BETWEEN DINING AND LIVING ROOMS

PLANING MILL WORK

More Shop Kinks

THE OLD EXPERIENCED WOODWORKING SHOP FOREMAN RELATES SOME PERSONAL ANECDOTES AND TELLS HOW SOME KINKISH THINGS ARE DONE

By Wm. C. Jasbury

LIKE weeds in the garden, I can come back; here's for some more talk on trees, *i. e.*, in the sausage form.

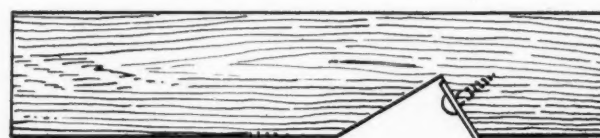
A Wooden Crazy Quilt. Some years ago, I made up a sample board of different kinds of woods for the superintendent of the plant where I spend my idle moments of 9 hours per day. The pieces were $\frac{1}{4}$ inch thick, $\frac{7}{8}$ inch wide and $1\frac{1}{2}$ inches long, glued on a piece of 5-ply veneer, similar to a checker board. Well, anyway, I had 57 pieces on this board, different shades and colors, not 57 different kinds, like "Heinz's 57 pickles." They were arranged such as walnut next to white oak, holly next to red oak, etc. Whenever a new kind of wood would show up around the shop I would swoop down on it like a fish-hawk off the Jersey shore, and put a sample on the board. So much for the "swoop."

The superintendent had a request from the local Y. M. C. A. to deliver a talk on wood. He asked me to write him a manuscript, that he might read it to the boys with his own steam-heat and the "show 'em" samples. Well anyway, he got away with the stunt in good shape. Along came a fire that destroyed the entire plant, including the 57.

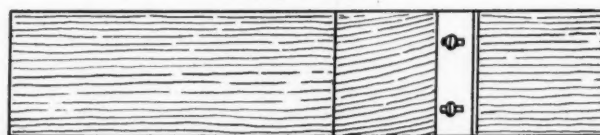
Now, I have another one under way; I already have 44. Some of the pieces I have would make history of a low tension. For instance, the piece of poplar is from a sleeping car; I was in a railroad wreck in Marshall, Texas, in 1901. The piece of yellow pine was given to me in the Boston navy yard, a piece of the old frigate "Constitution," by carpenters repairing "Old Ironsides"; a piece of orange I brought from California, and so goes the origin of my pieces of wooden crazy quilt. Worth reading? Alright.

A Convenient Scraper. Here is one I saw this afternoon—a new one on me, and I have seen quite a few good stunts with the scraper. I saw a cabinet maker cleaning up a piece of rabbeted oak. He had a piece of ordinary ash, 2 by 6 inches long, a notch cut in it, with a piece of scraper screwed in the notch. The scraper was back near the hand of the block, as it will readily be seen, when being used, it works

better that way. The scraper blade has two slots ground or filed in it, so that the cut can be adjusted by the two wood screws.



SIDE VIEW.



BOTTOM VIEW.

A Wood Scraper that did the Business

Speaking about wood turning, the souvenir business is odd and interesting. Many of the mountain resorts up along the Hudson River have a small souvenir lathe, run by water power. Some turner will have the outfit to turn cups, vases, jewel cases, napkin rings, tops, spool holders, buckets, ink stands, and dozens of other articles out of birch and ash, some of them having the bark left on in places, others turned smooth and polished. The vacationists buy these articles for souvenirs of their trip and many want to buy them as they are made, so that they can tell the stay-at-homes of the wonders of the woods, etc.

I have had some experience in the souvenir turning line; not at a mountain resort, but in the ordinary town planing mill. I recall very vividly one experience I had at turning souvenirs. I once worked for a lumber company that built a good sized mill, putting in a full line of house-work machinery. The proprietor, a generous old chap, wanted to make the opening day a joyous occasion. He issued printed invitations to the builders and their families, politicians, business men and hordes of others. Well, on the day of rubber-necks, I was turning souvenirs on the lathe. I had one apprentice boy carrying me blocks. I was certainly in high-gear for (one day, mind you) a crowd

of ladies behind me reaching and shoving, trying to get the cups, etc., as fast or faster than I could turn them. Now and then one of the pushing suffragettes would pass the turner, Mr. Me, a piece of candy. Imagine a mill man going through an ordeal of this kind. The rest of the boys were just "working." After the 4:30 whistle, we were banqueted in the office. A regular circus day for the people watching the mill animals.

Speaking about wood working, there are many things that happen in a big planing mill in the course of a year that would make good vaudeville. Many years ago, when sash and blinds were pinned through the mortise and tenon with wooden pins, we used to rip waste edgings into $\frac{3}{8}$ by $\frac{3}{8}$ inch sections, cut off $2\frac{1}{2}$ inches long and put into nail kegs, for the new boy to point. This apparatus was similar to a shoe maker's bench, only there was an iron with a tapering hole drilled in it. The new boy would hit the pin with a shoe maker's hammer, and throw it into another

keg. This was alright, except that it used to be monotonous, and said boy would contract high-tension symptoms of hook-worm and sleep. The case in particular, this youthful pin pounder was on a third floor, or rather gallery, over the machine floor. The shop comedian had bored a 2-inch hole through the floor, directly under the center of the pin industry. The machine men thought the foreman had gone to the office, but not so; he was up on the gallery measuring stock. He had not seen the sleeping (pin) beauty, so just as he turned around from behind a pile of sash, looking at the aforesaid boy, one of the husky machine men punched a heavy round stick up through the hole, raising boy, box and all about 2 feet in the air. The pins flew in all directions. The foreman, a nervous sort of a man, flew towards the stairs nearly collapsed from fright. Any person can imagine that the (second story) men were on the wait for the explosion. However, it didn't take place until the foreman had recovered his composure, and you can guess the finish.

Dimension Stuff

By J. Crow Taylor

Keeping Tools in Order

When you get some new tools that are bright and shiny you generally take a little more pains with them than you do of the older ones, for awhile until the new wears off. That's not long, though, for that particular polish the manufacturer puts on them just won't stay with them somehow, and for awhile when it begins to go, the newer tools look worse than the old ones that have taken on a sort of dull wearing polish of their own.

The new tools will get that same dull polish on them in time if you keep using them and take proper care of them. And right here it is in order to say that the best way to keep tools in good shape is to keep them in use. For when you lay them away, unless you take unusual pains about it, they are soon damaged by rust.

The simplest way to keep tools from rusting is to have some oily waste, not only at the shop, but along in the tool box, and rub each tool off with this when you go to put it away after using. If it has been raining or the tools are moist from perspiration from the hands, they should be carefully dried off at night before using the oily waste for rubbing, because the oil and moisture will not mix, and the moisture will stay underneath the oil. Chalk is an excellent thing to dry off with, and this is cheap and generally handy. If it is not, anything in the way of a dry absorbent powder will do.

That is the main thing, clean the moisture off regularly to prevent rusting, and use the oily waste to rub with, and in the course of time there will develop a sort of oil polish that will stay and hold its own better than the high shine that is put on by the tool maker.

Tools properly looked after this way do not get rusty or old looking, and it all comes easy and natural when you once get the habit.

The Best Time to Grind a Chisel

The best time to grind a chisel is not just before you need it on some job; neither is it a matter of certain stage of the moon, or of the greatest convenience to yourself, but it is the first time you get to the grindstone after the chisel is dull.

"Why," you may ask, "is it any better to grind a chisel at the earliest possible moment after it is dull than any other time?"

The answer is this: More chisels have been sent to the junk heap from being laid aside when dull till some convenient time for grinding than from any other one cause. Say you strike a nail or something and knock a gap in a chisel. You take up some other chisel and finish out the work you are doing. So far so good, but if you neglect to grind that chisel at the first grinding pretty soon you will be substituting another for it regularly. Then by and by you will come across a job of dirty work that you would not put any good chisel into, and you think, "well, that chisel's dull any way so a little more won't hurt it. You get it for the work, and when you are through the chisel is not only in worse shape than it was, but it is on the toboggan for the junk pile and the odds are in favor of it going there and never being put in good shape again.

That is why the best time to grind a chisel is the first trip to the grindstone after it is dull. It is a good rule to make, and it is a rule that also applies with equal force to other tools.



A Basement Shop and What It Produces

WORKING DRAWINGS AND COMPLETE DIRECTIONS FOR MAKING AND FINISHING THE BOOK RACK AND THE SERVING TABLE ILLUSTRATED

By Ira S. Griffith

WE are glad to be able to show photographs of the home workshop of one of our subscribers who is a devotee of the Home Workshop department, Mr. H. Geib, of Chicago, and of two pieces of his handcraft. Mr. Geib makes use of a small electric motor in connection with a few pieces of machinery. Most of his work, however, is hand work. The distinguishing feature of all of his work is the soundness of the construction and the high degree of skill manifested in the making. Woodwork is his avocation, not his vocation. The working drawings and their dimensioning are suggestive merely and may be varied to suit the needs of the worker.

Adjustable Bookrack

Bookracks are made in numberless ways. The one shown herewith illustrates a very desirable style. It is simple, easily made and is able, by means of the adjustment, to hold a limited number of books in a compact vertical position.

It is suggested that the fixed end be dovetailed to the base. This will necessitate the grain of the up-rights being placed up and down, of course. If the worker does not feel equal to the task of making the dovetail joint, the ledge may be made use of and the parts securely fastened by means of glue and brads.

The movable support may be attached either to a



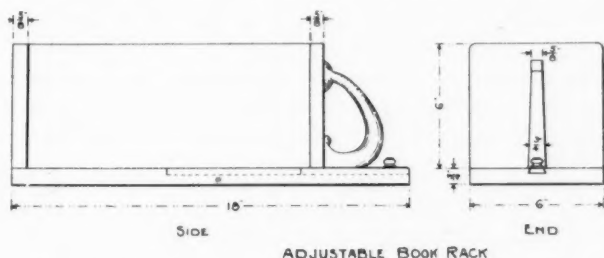
Basement Workshop of Mr. H. Geib, of Chicago, Where Some Great Pieces of Handicraft Have Been Turned out

wood or metal slide. The handle for this movable end should be draughted freehand upon the stock after the proper taper has been worked thereupon. With a small scroll or coping saw cut out the shape.

The base is to be squared up and then the dovetailed way worked therein. If a circular saw, with an adjustable stop, is at hand, such as the one shown in the accompanying shop picture, this piece of work may be quickly and accurately done. If no machine is available the gauge and chisel will have to be depended upon, unless one chooses to work the parts separately, and then glue them together.

STOCK BILL FOR BOOKRACK.

Base, 1 piece, $\frac{3}{4}$ by $6\frac{1}{4}$ by $18\frac{1}{2}$ inches, S-2-S.
Ends, 2 pieces, $\frac{5}{8}$ by $6\frac{1}{4}$ by 7 inches, S-2-S.
Slide, 1 piece, $\frac{3}{8}$ by 1 by 4 inches, S-2-S. (Preferably brass and smaller.)
Handle, 1 piece, $\frac{3}{4}$ by 3 by 5 inches, S-2-S.



Any kind of cabinet wood, such as quarter-sawed oak or walnut or mahogany, will be appropriate.

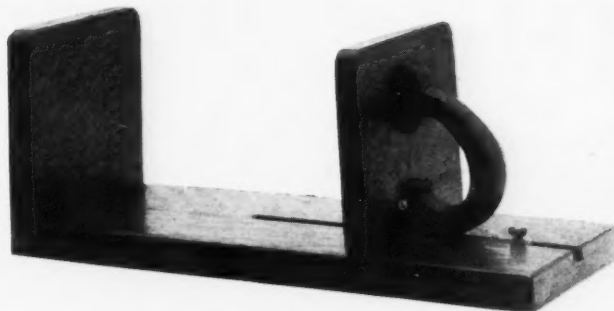
Serving Table

For a rather large dining room, the length of the serving table, which may be used as well for a buffet, should be increased to 48 inches. For a small room, the present length will be found suitable.

STOCK BILL FOR SERVING TABLE.

Posts, 4 pieces, $1\frac{3}{4}$ by $1\frac{3}{4}$ by 40 inches, S-4-S.
Shelving, 3 pieces, $\frac{3}{4}$ by 18 by 38 inches, S-2-S.
Partitions, 2 pieces, $\frac{3}{4}$ by 18 by 14 inches, S-2-S.
Rails, ends, 6 pieces, $\frac{3}{4}$ by $3\frac{3}{4}$ by 17 inches, S-2-S.
Rails, back, 3 pieces, $\frac{3}{4}$ by $3\frac{3}{4}$ by 39 inches, S-2-S.
Panels, ends, 2 pieces, $\frac{3}{8}$ by 12 by 15 inches, moulded.
Panel, back, 1 piece, $\frac{1}{2}$ by 12 by 37 inches, S-2-S.
Doors, stiles, 4 pieces, $\frac{3}{4}$ by 2 by 14 inches, S-2-S.
Rails, 4 pieces, $\frac{3}{4}$ by 2 by $10\frac{1}{2}$ inches, S-2-S.
Panels, 2 pieces, $\frac{3}{16}$ by $9\frac{1}{2}$ by $10\frac{1}{2}$ inches, S-2-S.
Slats, 19 pieces, $\frac{3}{8}$ by 2 by 12 inches, S-2-S.

Begin work by squaring the ends of the posts to length, or at least scoring lines about each to indicate the proper lengths. Stand them upright in the positions they are to occupy relative to one another in the finished piece and mark, as with penciled



Adjustable Book Rack

circle, the approximate locations of the intended mortises. After this has been done these parts may be laid upon the bench side by side and the accurate locations indicated.

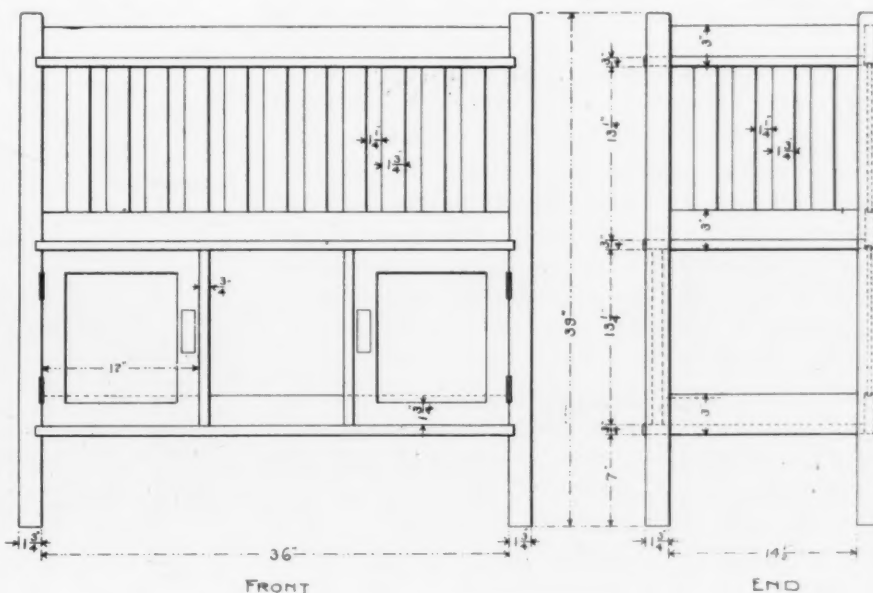
Square up and lay out and work the rails and their tenons. Some of these rails will need to be plowed for paneling, and some of them will have to be mortised for slat ends. Square up the paneling for the ends of the table, also the necessary slats. Having done this much, place the table ends in the clamps, using good hot glue.

In placing the slats, the easiest way is to plan to house the whole slat end into the rail.

While the glue on the ends of the table is hardening the shelving can be squared, also the back rails and paneling and slats. Assemble the whole frame by clamping the shelving and back in place; and, while the glue on this is hardening, make the doors. After the clamps are removed, fit the doors and lock and hinge them.

How to Finish

If the piece is made of oak or other coarse grained wood, the following finish will be appropriate: After thoroughly scraping and sandpapering all the parts, apply a coat of stain of a color desired for the high-



SERVING TABLE

lights. Allow this to dry over night, then sandpaper it lightly with number 00 paper, and apply a very thin coat of shellac. Sand the shellac when dry, and apply a paste filler of a color somewhat darker than that of the stain. Apply with a stiff bristled brush; and when it has flatted, or turned dull in color, rub it with excelsior and afterward with a piece of cloth of some kind. Allow the filler to harden, then apply a coat of shellac. After this has been rubbed down with fine sandpaper, apply several coats of some good rubbing wax, polishing each coat thoroughly with a felt cloth.

If a more permanent finish is desired, instead of the wax apply several coats of some good rubbing varnish.



Serving Table for Dining Room

Rub the first coats with fine steel wool and the last with pulverized pumice stone mixed with raw linseed or crude oil.



One for the Math. Sharks

The guest of a hotel asked the clerk for change for a \$5.00 bill. The clerk could not accommodate him. Then the guest asked for a loan of \$1.00, which was given him, his \$5.00 being left with the clerk as security. Later the guest went to the clerk and gave him \$4.00, receiving in return his \$5.00 bill. Somebody lost money by the transaction. Which one, and how much?



Old, but Still Good

A traveler riding with an Irishman came within sight of an old gallows, and, to display his wit, said:

"Pat, do you see that?"

"To be sure I do," replied Pat.

"And where would you be today if the gallows had its due?"

"O'id be riding alone," replied Pat.



NOBUDDY kin talk as interestin' as th' feller that's not hampered by facts er information.

What Do You Care?

A full grown elephant can carry three tons on its back.

An inch of rain means that 101 tons of water have fallen upon every acre of soil.

A whale's skin, which in places is two feet thick, is the thickest hide of any living creature.

As an argument in favor of matrimony, it is stated that among every 1,000 bachelors there are thirty-eight criminals, while among married men the ratio is only eighteen per thousand.

Eagles have been noticed flying at a height of 6,000, and storks and buzzards at 2,000 feet. A lark will rise to the same height, and so will crows. As a rule, however, birds do not fly at a greater height than 1,000 feet.

The ties used on the Panama railroad are made of such hard wood that holes have to be bored for the spikes, and a special form of screw spike used.

Turnip seeds have been known to be dormant for seven years, through being planted too deep, and after that time to sprout.

In a banana growing country one acre will ordinarily produce 17,000 pounds of the fruit, or more than one and one-third times as much food substance as an acre of corn.

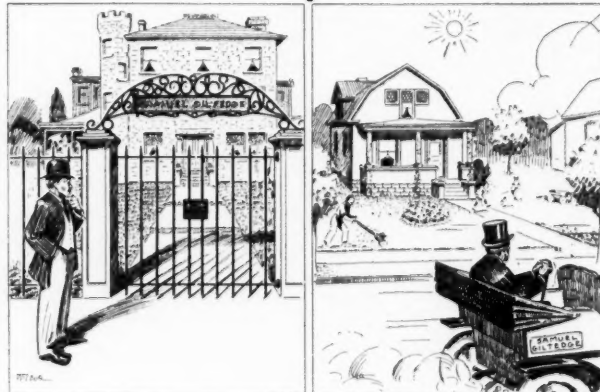
Whales are increasing rapidly, as it no longer pays to kill them. Twenty-five years ago 400,000 barrels of whale oil was produced annually. The quantity has now fallen to about 60,000 barrels.



Privileged to Challenge

Judge.—"You are privileged to challenge any member of the jury now being impaneled."

"Well, then, yer honor, O'll foight the shmall man wid wan eye, in the corner, there ferninst yez."—Metropolitan.



"I Wish I had a Home Like That"



Practical House Painting

Second Paper

SOME FEATURES IN PAINTING NECESSARY TO GOOD WORK

By R. H. Forgrave

WHEN paint makers guarantee their paint at all, it is never longer than for five years. Why is this? Is it because good paint will not last longer? Not at all. That the life of good paint does not last longer than five years is due solely to the way it is put on. Three-coat work should last ten years and be in good condition at the end of that time, and will, if certain features are observed in its application. The best paint sometimes fails, but, if the reader will observe the following methods in doing his work, he may feel reasonably sure of a good job and one which will last the maximum length of time as paint goes.

After the priming coat is thoroughly dry (and it should stand at least two weeks in the summer, and longer in the winter until the oil hardens) the second coat may be applied. The most of the oil in the priming coat is absorbed by the wood pores, and is seemingly dry in a day or two after it is applied, but if you will examine some of the oil in the pores with a microscope, you will find it is soft after several days. That each coat of paint should be perfectly dry before another is applied is one of the prime features in good painting. Another essential feature is brushing it out well. Brushing out well causes the paint to come in contact with every part of the under surface, and adhere to it, thus lessening its liability to blister. For by working the brush through the paint causes small blubbers, often invisible to the naked eye, and if these small blubbers are not worked through and broken up by the brush, air will get behind them, and hold the oil from coming in contact with the surface, and small blisters is the result.

Another thing to observe is the condition of the weather. In order to get the best results paint should not be put on a damp surface or in rainy weather. If it happens to rain after a coat is applied, be sure to allow time for it to dry before giving another coat. A painted surface will hold moisture for several hours sometimes.

How to Mix and Apply the Second and Third Coats of Paint

If it is prepared paint, use little, if any, thinner. If you use thinner use raw oil, and use only enough

in the second coat to make the brush work smoothly and comparatively easy. You can tell when it is doing this by the brush marks. The third coat should contain more oil than the second. I know this is contrary to what some good painters practice; but I have found by using plenty of oil in the second and third coats the paint will last longer. If the oil is the life of the paint, as all good painters claim, it should be where it will come in contact with the elements and not the most of it be under the pigment, and soaked into the wood. Do not add any drier to mixed paint. As a rule it dries too quickly anyway for its good.

The Proper Mixing of White Lead

If white lead is used for the second and third coats, it should be mixed as follows: Take 100 pounds of lead in oil. Add about a gallon of raw and break it up thoroughly. Then add raw oil until it is in the proportion of 100 pounds of lead to 5 gallons of oil, and mix it thoroughly. The paint, after it is ready to use, should be of such a consistency as to take a full brush full and holding it up, the paint will run in a stream and not drop off. The consistency should be nearly at the point when, if any more pigment be added, it would leave the brush in drops instead of a stream. Be sure that all lumps are broken up.

If the paint persists in being lumpy, which it will sometimes when the lead has stood in the keg too long, it may then be strained through screen wire. Lay a piece of screen wire over a suitable vessel, and pour on the paint. Do not add any more oil or any other thinner to make it run through. Instead, take a stick or your mixing paddle and rub it through.

Stir in the color after the paint is mixed. If drier is used be careful not to use too much. The proper quantity is about a quarter of a pint of liquid drier to a gallon of paint, usually turpentine japan. White lead alone is too soft to make an ideal paint. It must be fortified by a harder pigment of some kind. Zinc white, known as oxide of zinc, is the pigment generally employed for this purpose, but you must be very careful and not get too much or it will crack, when it is liable to scale off. Again, it will sometimes blister if too much is added. From 15 to 25 per cent is the

proper quantity. The zinc white in oil should be mixed to the consistency of paint before it is mixed with the lead paint which should also be of the consistency of paint. If this condition is not observed, you are not liable to get the two different pigments evenly mixed.

Bring plenty of paint to the surface. Don't be afraid of putting on too much, but be sure to brush it out well. Brush it out so it will be of the same thickness throughout, and when you leave off in the course where the lap will come, brush the paint to a feather edge, and when the next lap is put on and well brushed it may be no heavier than at any other point. Being so particular about mixing and brushing may seem uncalled for, but it is not. Too much stress cannot be laid to this important point.

There can be no hard and fast rules for the mixing of paint without the material is tested. The reader may follow a given formula and miss it badly, owing to the difference of strength in material. It is difficult to write it, so the reader will understand when his paint is right. The only way is the cut-and-try plan. Hence, the most I can is, it should be mixed of such consistency as to run from the brush, as above described. A little experience will tell him when he has it right. I might add, the brush should work freely, that is, not drag; should spread the paint evenly and of the same thickness the whole width of the brush, while the brush marks should not be over-evident by reason of the paint containing too much pigment.

Leaving Brush Marks, Fat Edges and Holidays

If one is not careful to brush the second and third coats out well, brush marks will show next to the corner strips, casing, etc., which is considered the mark of a poor workman. Just before leaving each lap, that begins or ends at a casing, lay the point of the brush in the angle formed by the casing and weather-boards, and draw the brush lightly over each board. To eliminate fat edges, straddle the edge of each board as the finishing touch, and when the brush is comparatively free from paint just before dipping for a new lap. Fat edges often start paint to cracking, which results in subsequently scaling. Be as particular with one coat as with another. Do not leave any holidays in the under coats, thinking the next coat will obliterate them. Of course, you can cover them, but it is not considered mechanical to leave them.

Every part of a house that is exposed to moisture in any way should be painted. It is not usual to paint the under side of door and window sills when they cannot be seen, but that is no reason why it should not be done. At least give such places one coat. It is a good idea to paint the lower edge of the window sash. Many sash have decayed before their time, and before the remainder of the window, simply because they were not painted.

If a different tint is to be used for the trimming, it should be carried on the ladder along with the body color, and the work done at the same time. By so doing, considerable time may be saved which, otherwise, is lost by reason of extra climbing, when only one color is carried up to the work at a time. Paint the cornice first, then the body color, then the corner-strips as far as the body color reaches.

As to the window sash in new work, they should receive the full number of coats and allowed to dry before being put in permanently. This does away with the sticking, a most aggravating feature.

The puttying should be done on the priming coat just before second coating. It is better to allow the putty to dry before painting. At least, it should set, otherwise the paint is liable to wrinkle over large places, due to the paint drying sooner than the putty. Be sure that the holes are stopped entirely full, for when the wood dries, it may shrink when the putty is apt to sink.

Some good painters claim that the lack of affinity between coats is often the cause of paint not doing as well as it might. Hence, it would be wrong for us to use yellow ochre as a primer and white lead over it. I have often noticed when white lead scales, it scales from the ochre. Many good jobs have been done by using different kinds of paint. Still I think it is better to use the same kind of paint throughout.



Highest Building in World is Up in N. Y. New Skyscraper Has 55 Stories and is 750 Feet High

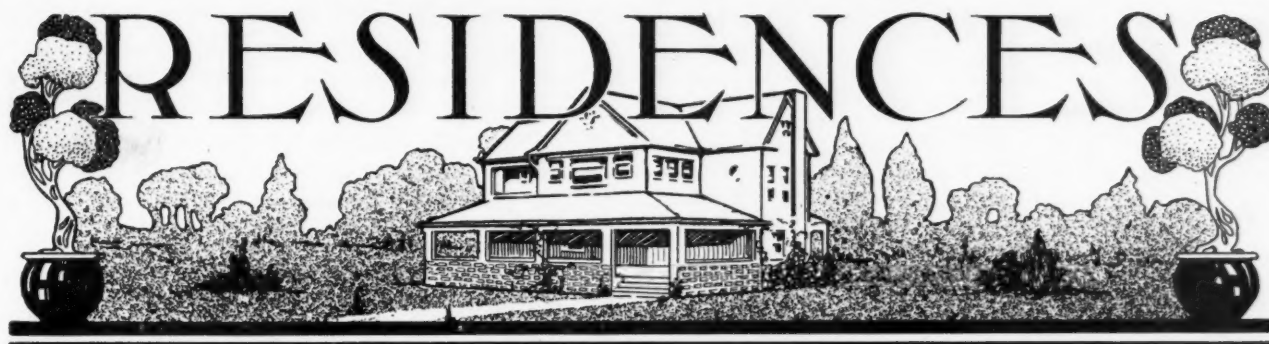
The last steel girder in the mammoth fifty-five-story Woolworth Building, the tallest building in the world, was riveted at noon, July 1st, and soon afterward an American flag was hoisted on a steel pole that rises thirty feet above the top of the building.

This tremendous "Old Glory" is twenty-four feet long and twelve feet wide. When completed, New York's newest skyscraper will have cost approximately \$13,500,000—for land, \$4,500,000; for foundation digging, \$1,000,000, and for construction, \$8,000,000. Work was begun November 4, 1910. It stands on a 200-foot plot at Broadway directly opposite the post-office.

The structure is so tall that even New Yorkers stop and look up at it in amazement.

THIRTEEN TALLEST STRUCTURES BUILT BY HUMAN HANDS.

<i>Colossus of Rhodes</i>	105 ft.
<i>Pantheon, Rome</i>	150 ft.
<i>St. Isaac's, St. Petersburg</i>	365 ft.
<i>Statue of Liberty</i>	305 ft.
<i>Great Pyramid of Cheops</i>	450 ft.
<i>St. Peter's, Rome</i>	400 ft.
<i>Rouen Cathedral</i>	490 ft.
<i>Cologne Cathedral</i>	516 ft.
<i>Washington Monument</i>	555 ft. 5½ in.
<i>Singer Building, New York</i>	612 ft. 1 in.
<i>Metropolitan Tower, New York</i>	700 ft. 3 in.
<i>Woolworth Building, New York</i>	750 ft.
<i>Eifel Tower, Paris</i>	984 ft.



Modern Hip-Roof Brick Veneer House

COMPLETE WORKING DRAWINGS WITH ARCHITECT'S PERSPECTIVE OF ATTRACTIVE SEVEN-ROOM HOME

IN this square type, hip-roof, brick veneer and stucco residence, which was built at Riverside, Ill., for Mr. R. F. Wadick, are to be found many pleasing as well as thoroughly practical features which builders will do well to make note of, as they might be profitably put to use in some future construction work.

As will be seen from the perspective, exterior finish of this home is brick veneer from basement foundation to second floor. Then stucco has been used. The porch extends the full width of house.

Entrance from the porch is into good sized vestibule which opens into both living and dining rooms. Living room is large, well lighted and has brick hearth, fireplace. Dining room is finished with beamed ceiling, has large buffet and built-in window seat in bay win-

dow. At the rear of living room a small hall opens into a den. The latter could also be used as a downstairs bedroom. Kitchen is directly off this small hall. Note that no china closet is provided, but a large built-in cupboard is utilized.

The stairs, as placed in the rear, can well serve as both front and back stairs, and the downstairs toilet, in small closet, is a particularly convenient arrangement.

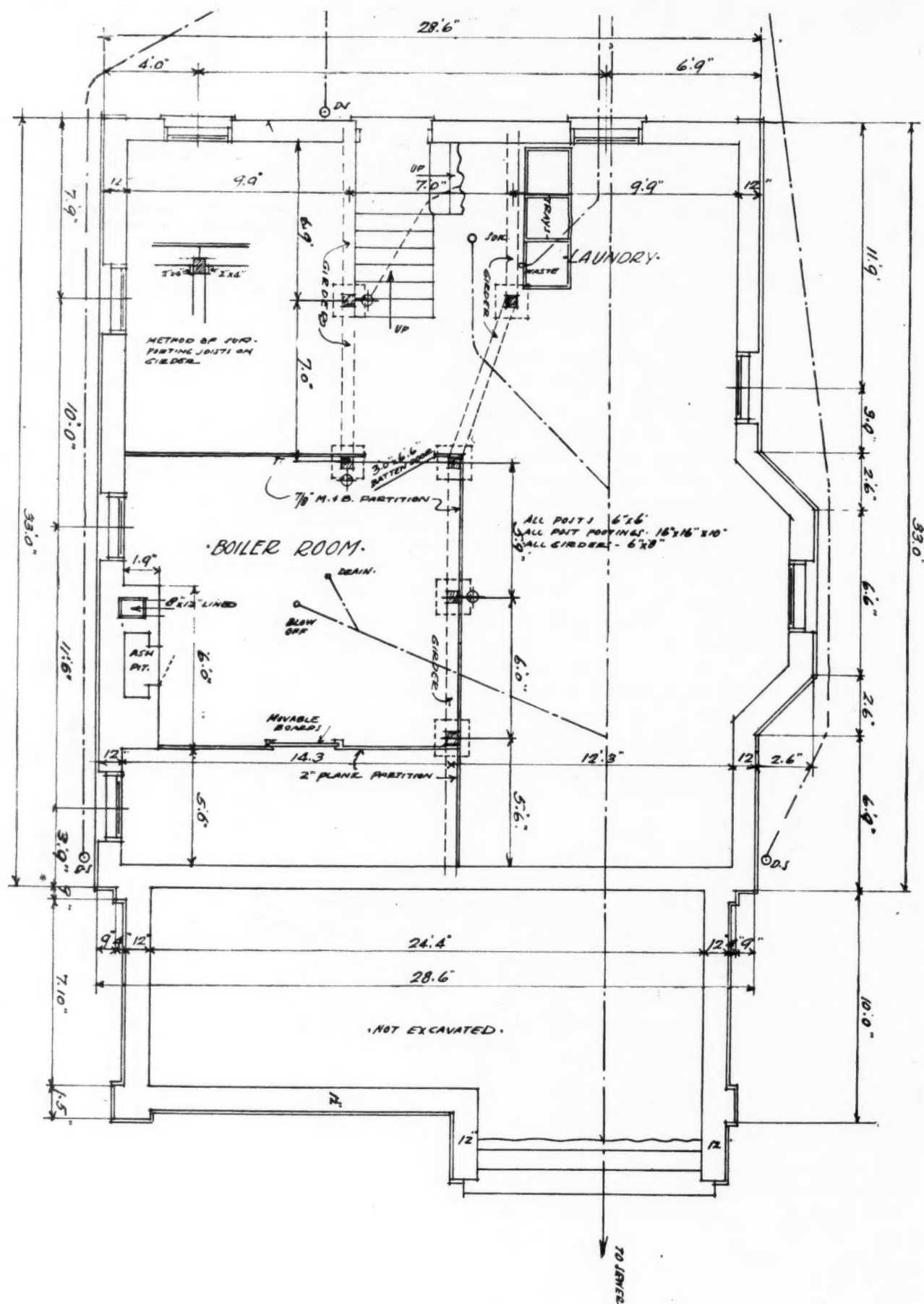
Upstairs bedrooms are large, with exceptionally large closet space. A good sized sleeping porch opens from rear bedroom.

In basement provision is made for heating and laundry equipment, also storage space. Basement has watertight cement floor and walls.



Well Designed Residence of R. F. Wadick, Riverside, Ill.

COMPLETE WORKING DRAWINGS FOR THIS HOUSE ARE PRESENTED ON THE 6 PAGES FOLLOWING

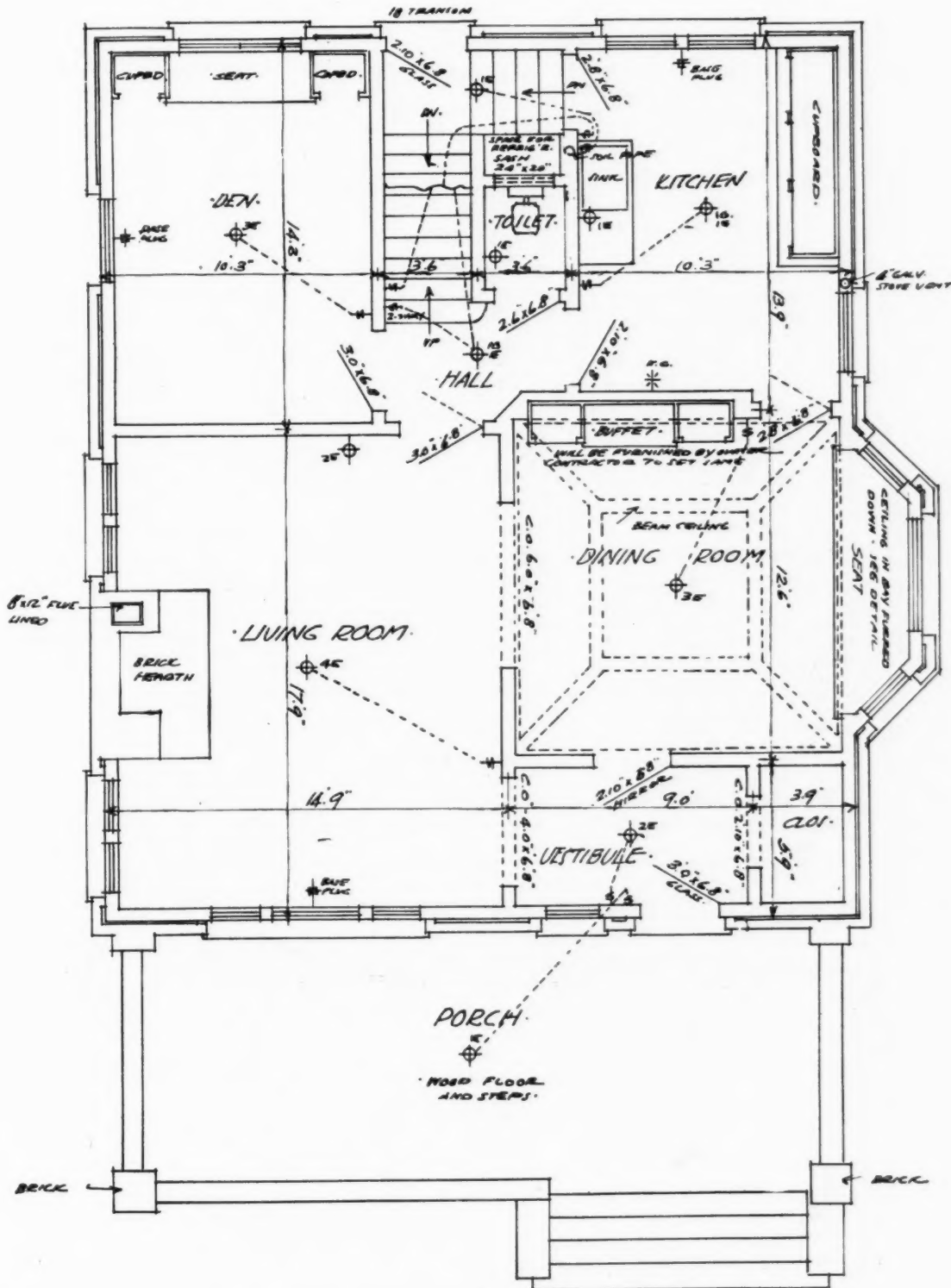


(House Shown on Page 73)

Statute Requiring Architects to Be Licensed Held Valid

The Illinois Statute of 1897, page 81, prohibits any person from practicing architecture in the state without a license. Section 9 provides that any person who shall be engaged in the planning or supervision of the erection, enlargement, or alteration of buildings for

others and to be constructed by other persons than himself shall be regarded as an architect; but nothing contained in the act shall be construed to prevent any person, mechanic or builder from making plans and specifications for or supervising the erection, enlargement, or alteration of any building that is to be constructed by himself or his employees. In an applica-



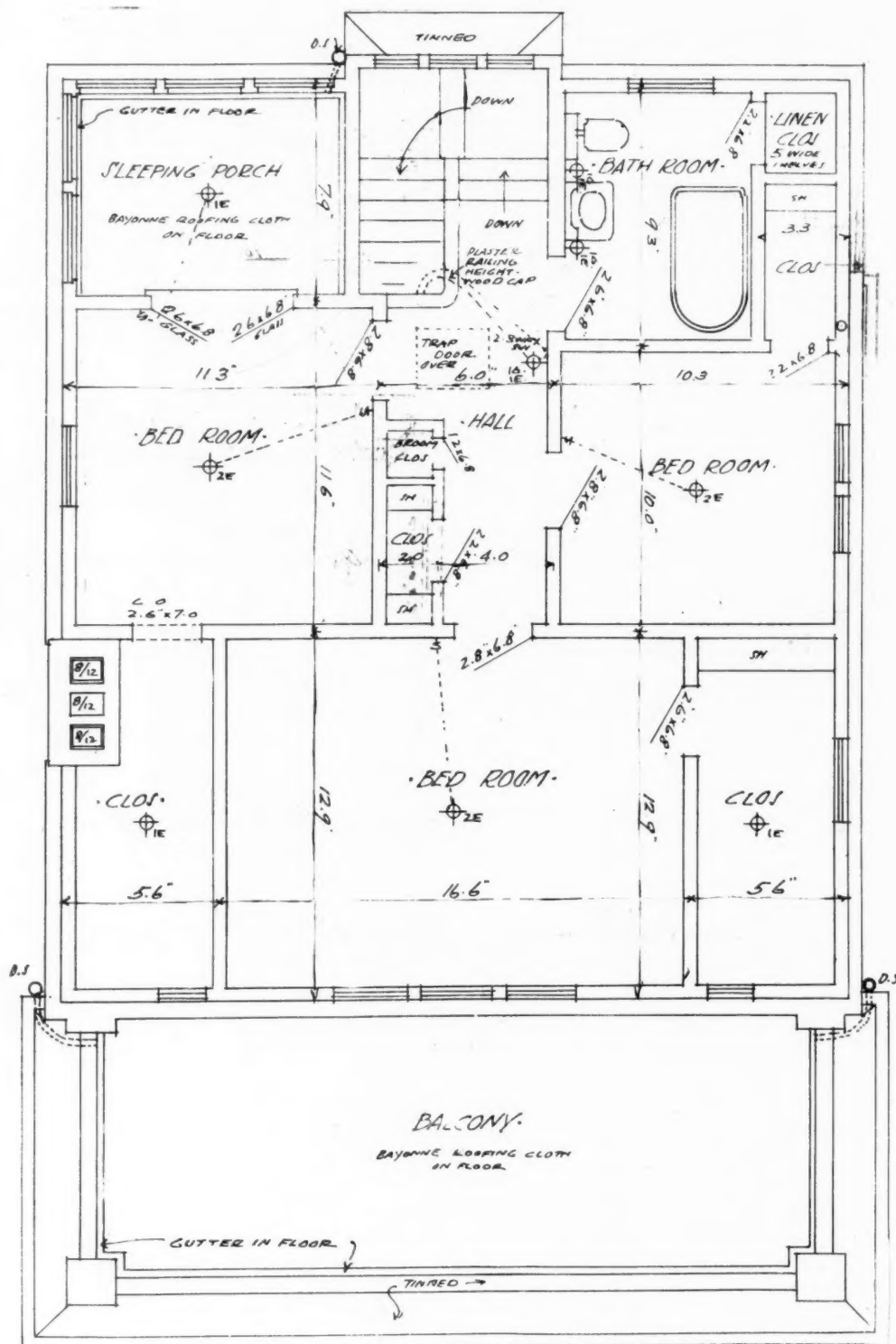
FIRST FLOOR PLAN

(House Shown on Page 73)

tion for mandamus to direct the civil service commission to certify the relator for appointment as city architect for Chicago the act was held to be valid by the Illinois Supreme Court and not violative of U. S. Constitution art. 2, sec. 2, providing that no person shall be deprived of life, liberty or property without due process of law, nor of the 14th amendment. The section properly defined the occupation of an archi-

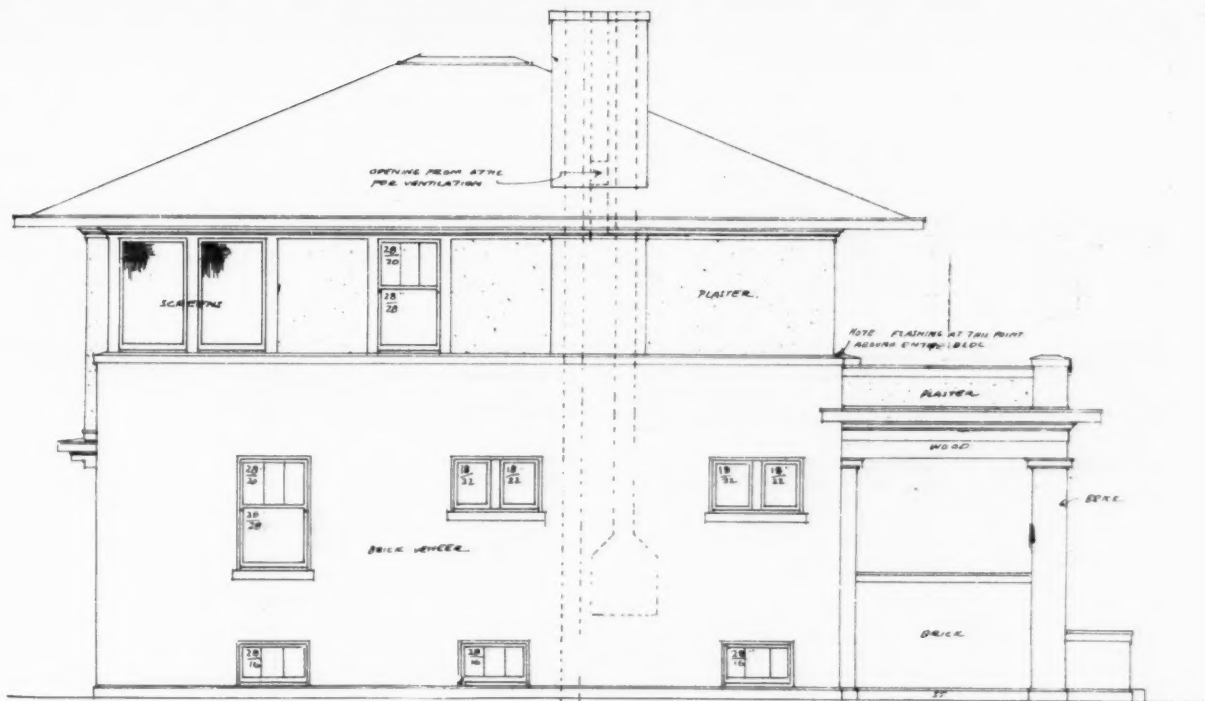
tect. He is one who makes it his occupation to form or devise plans and designs and to draw up specifications for buildings or structures and to superintend their construction. Any person erecting a building may employ an architect if he sees fit or make his own plans and specifications, and he does not become an architect by planning the building which he erects.

People v. Lower, 251 Ill. 527, 96 U. E. 346.



SECOND FLOOR PLAN

(House Shown on Page 73)



LEFT SIDE ELEVATION

What a Horse Power Means

Very few people realize just what a horse power, as expressed in engineering terms, really means. When it is stated that the world's largest Curtis steam turbine, which drives an electric generator in the Waterside station, New York, develops 30,000 horse power, the meaning is vague and incomprehensible. Imagine this term reduced to man power, and almost every one can grasp its full meaning. If it takes twelve men to equal one horse power, then this mam-

moth turbine engine develops twelve times 30,000, or the working energy of 360,000 men. If these men worked in eight-hour shifts each day, it would require the services of 1,080,000 men every twenty-four hours to produce the working energy of this single turbine unit.



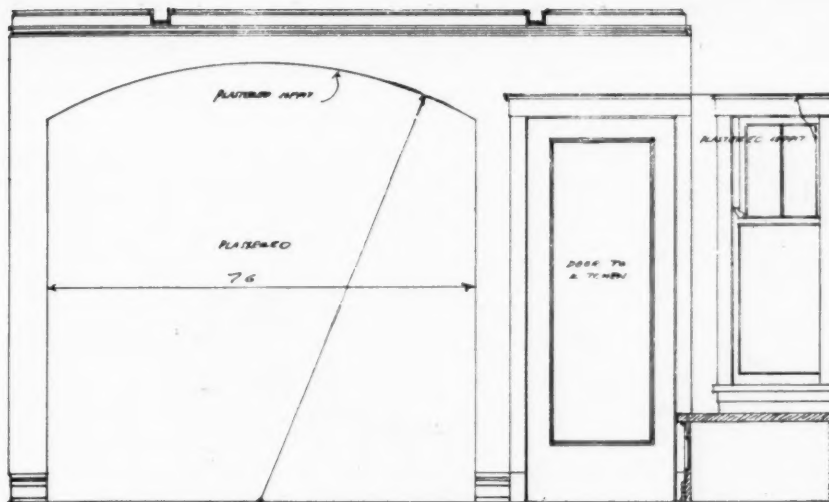
A Roofing Story

In August, 1859, a copper roof was taken off the Merchants' Exchange, Third and Walnut Streets,

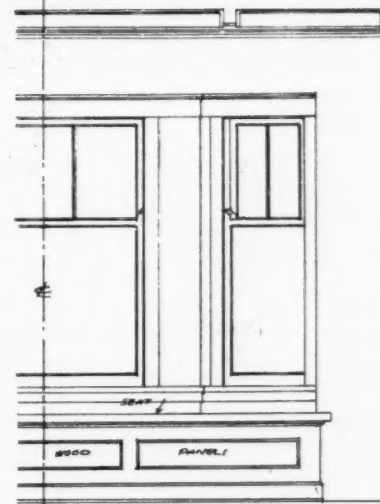


RIGHT SIDE ELEVATION

(House Shown on Page 73)

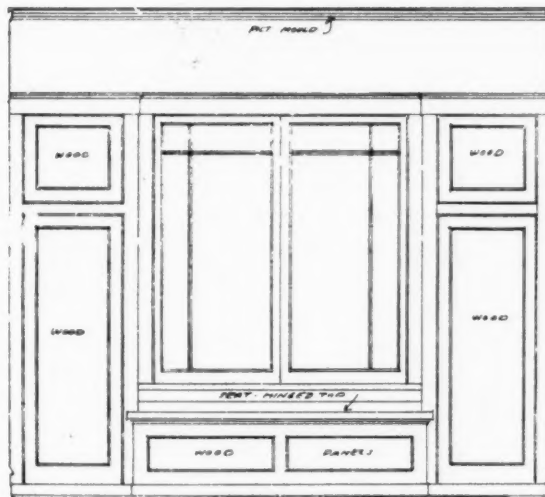


END OF DINING ROOM
SHOWING BUFFET RECESS

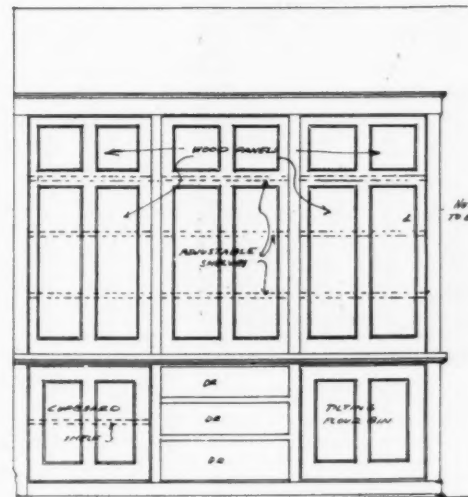


HALF ELEVATION OF BAY

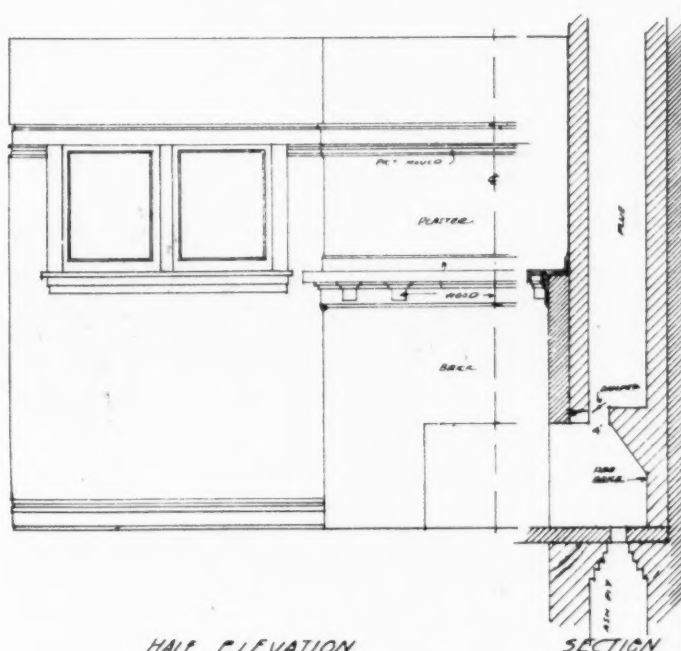
DINING ROOM DETAILS



END OF DEN SHOWING CUPBD & SEAT



KITCHEN CUPBOARD



HALF ELEVATION

SECTION

FIREPLACE DETAILS



FIRST FLOOR

SECOND FLOOR

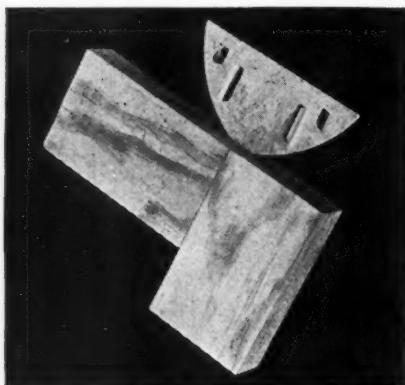
TYPICAL DOORS AND TRIM

The Editors Drawer

New things worth while

Fastening Wood Corners without Mortising, Gluing or Nailing

The joining of corners is the most frequently occurring operation in woodworking. What seems to be a great improvement here, "The Steel Tenon System" will therefore be most interesting. Instead of ordinary mortising, dowsing and gluing methods, a steel tenon is inserted into a slot



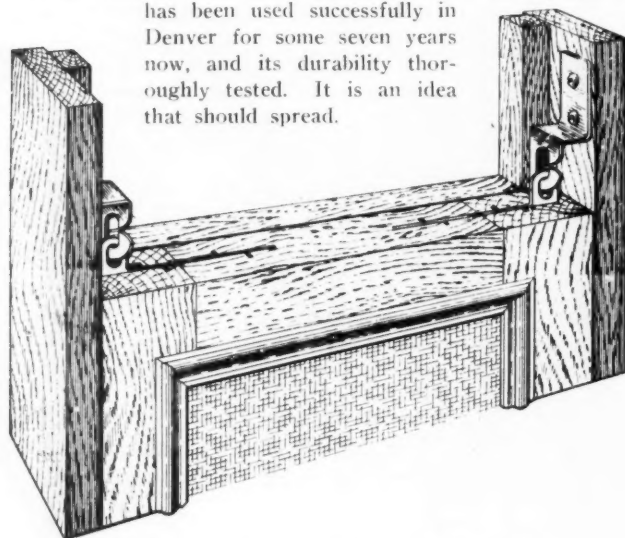
Winged Tenon of Steel Locks Corner

sawed into the edge of end cross bar and side stile as illustrated. The tenon is a flat piece of metal with projecting wings of sizes suitable for the particular use desired.

The steel tenon makes a stronger frame out of thinner material. In screen doors, for instance, the lumber can be one-third thinner and still have the same strength as the ordinary wood mortise frame. A very simple operation with a small circular saw makes the slots, the sticks are clamped together, and the steel tenon driven in.

A special adaptation of "The Steel Tenon System" for window screens is illustrated. A projecting loop is left on the tenon and a hook is furnished to be fastened to the window frame so that the screen can be hung from the top.

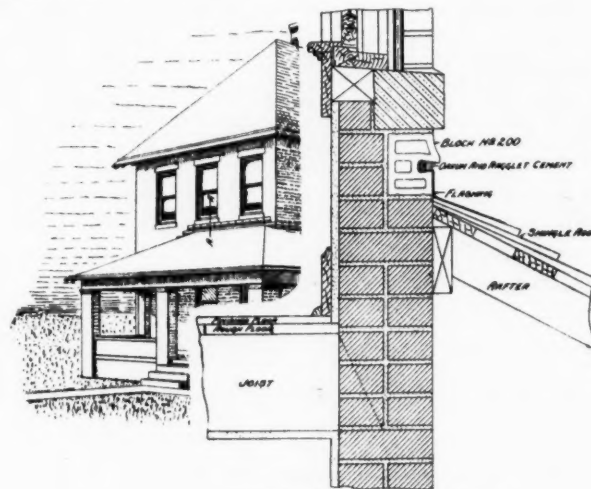
While this system is a decided novelty in most places, it has been used successfully in Denver for some seven years now, and its durability thoroughly tested. It is an idea that should spread.



Window Screen Hung on Projecting Steel Tenons

That Leak Above the Porch Roof Stopped

Probably one of the greatest trouble makers in house building is the leak that develops where the porch roof joins the house wall. Many a builder has lost his reputation for good work because of a leak here that refuses to be stopped. Do the best he can at putting in flashing tin, the water from a driving storm seems possessed to crawl up under the flashing and then find its way down inside the wall until it has loosened the plaster and spoiled the interior decorations.



SECTION AT A-A, SHOWING RAGGLE BLOCK USED TO RECEIVE FLASHING FOR PORCH ROOF
Special Terra Cotta Blocks Receive Flashing

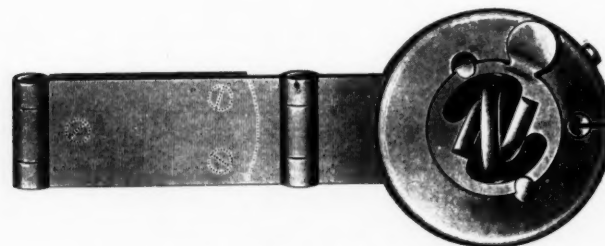
Both with frame houses and masonry houses this trouble is present. There are ways of remedying it in frame houses and now an effectual remedy is offered for brick houses. A special raggle block of vitrified clay tile is offered. The way it is used is clearly shown in the illustration. This is one of the little niceties of building; one of the improvements that costs no more to have if builders know about them and will plan a little ahead to use them. This special raggle block is certainly an insurance policy against future trouble.

A Hasp that Locks

Some things have been wanted so long and are really so simple (when finally invented) that we say impulsively: "There it is! Why wasn't that ever thought of before?"

How many times have you wanted to lock up the barn or shed and found the padlock missing? The hasp and staple were there all right but someone had run off with the lock.

A combined padlock and hasp is now obtainable. The lock cannot get away. More than that, the hasp plate hinges back

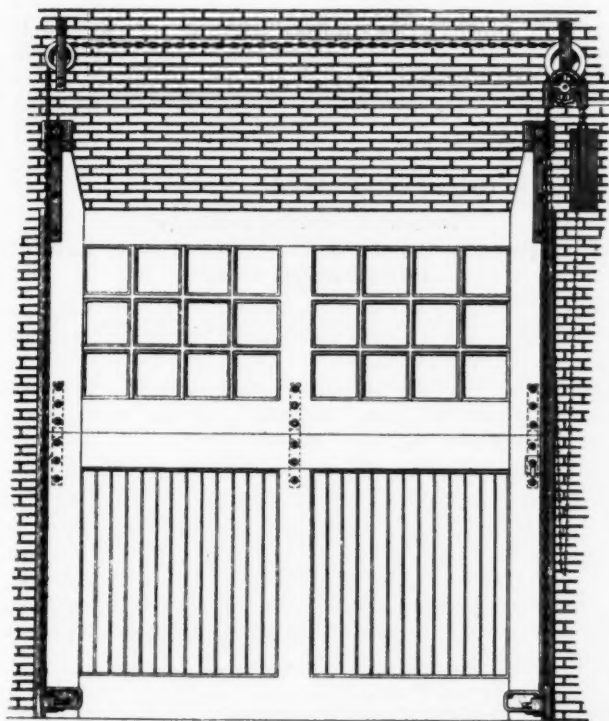


Lock is Part of Hasp and is Burglar-proof

over itself, completely covering the heads of the wood screws, which fasten the hasp in place; so that it is impossible to unscrew them and so gain entrance. This hinged, hasp lock has been thoroughly tested in a limited territory. Carpenters and builders generally can make fine use of it.

Warehouse Doors that Fold Up

What to do with big doors has been a problem. With most doors there has to be a big unobstructed space for the door to slide back past. For warehouses and shipping plat-



Standard Wood Cross Horizontal Folding Door. Paneled in Upper Half With Glass. This Door Takes up no Valuable Space When Either Opened or Closed

forms and other similar buildings every foot of space is too valuable to keep half of it inactive, simply to give a place for the doors to slide.

There is a warehouse door, a horizontal folding door, which operates as shown in the illustration. It is divided horizontally into two sections, the top half being secured to the wall over head by heavy hinges, and the bottom section hinged to it. Counter-balancing weights help to operate the doors.

With folding doors of this sort, the whole side of a warehouse or freight shed can be thrown open. They can be arranged to fold inward, or outward to form a canopy. One of the uses suggested for this style door is for garages.



New Style Door Chain and Lock

Maybe the latch string used to hang out, as the stories of pioneer days have said; but the housewife doesn't feel quite that way about it today. Protection for the home is wanted now. So a lock has been perfected that allows the door to stand ajar but at the same time locks it effectually. No sneak thief or tramp can enter where this "Surelock" thrusts



This Fixture Locks the Door Thus or Tight Shut

across its restraining arm. The housewife may feel secure in her home, and she doesn't have to shut the outside doors tight shut and cut off all ventilation in order to lock them.

The illustration shows the "Surelock" fixtures used as a protector. The door is locked in this open position. By means

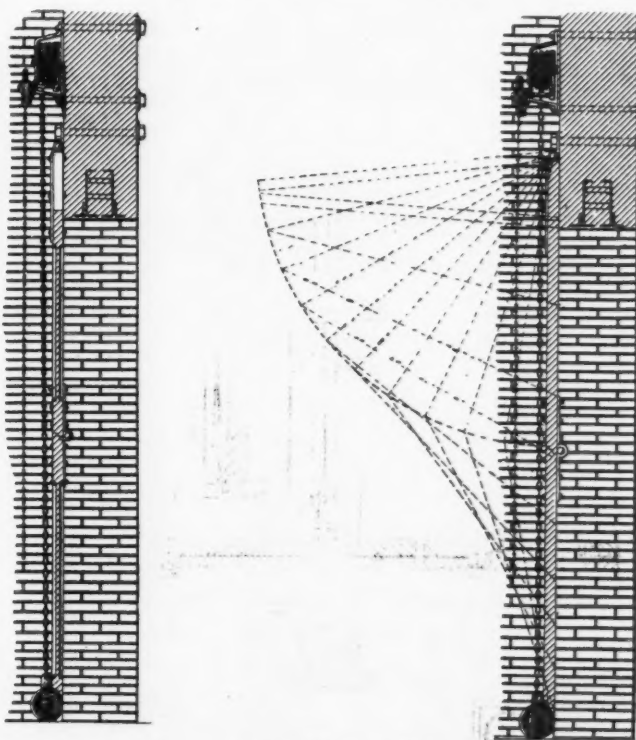


Diagram Showing Different Positions Formed by Door in Opening and Closing

of a simple operation from within, the lock arm is doubled up and a lever thrown over, locking the door tight shut as with any other lock.

Such a worthy piece of builders' hardware as this, is certain to be in good demand as soon as builders generally become acquainted with it.



Reaches Nuts in Hard Places

A ratchet wrench so constructed that the jaw can be set at any angle and having an adjustable ratchet so that the jaws will hold firm when operating the handle either direc-



A Ratchet Wrench Will Reach it

tion, is a very handy tool for reaching nuts and cap screws which an ordinary wrench cannot handle.

Yankee ingenuity is nowhere more evident than in the design of a tool of this sort. It is so simple—when once you see how it is done! Sizes are now obtainable to fit standard nuts from $\frac{1}{4}$ to $\frac{3}{4}$ inch. This is a wrench to make anyone rejoice who has work to do around machinery or automobiles.

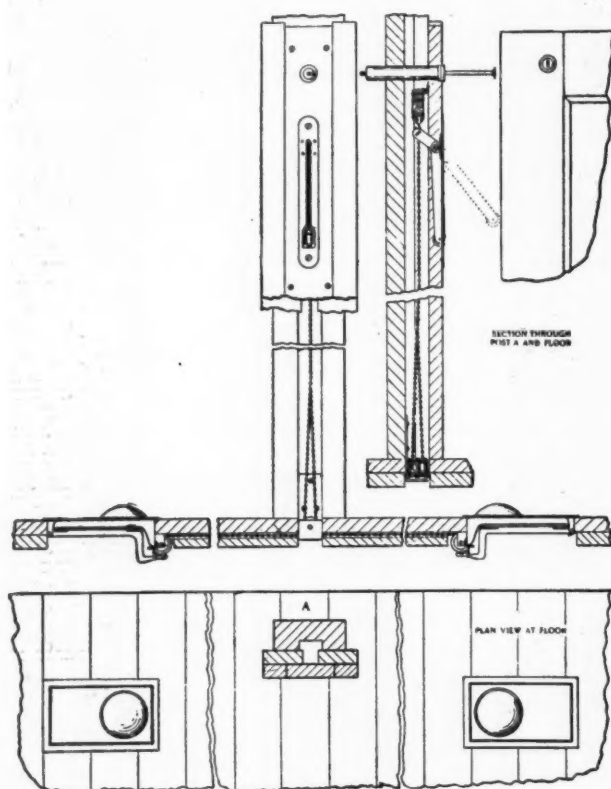


An Automatic Sliding Door

The architects sometimes draw their plans, showing all the doors swung. This makes the average floor plan look like a jungle of Chinese fans, all open. Sometimes as much as a fifth of all the floor space is preempted by the doors. This makes some people feel that swinging doors take up too

much room—and favor doors which slide into the partition.

Hung and adjusted in the modern way on ball bearing rollers, the sliding door operates easily. A new appliance which is certainly decidedly interesting, is an opening mechanism for sliding doors. Stepping on a small foot plate just



Plan, Elevation and Section Views of Automatic Sliding Door

in front of the door, pushes the door back into its pocket. The door rolls back by gravity after you have passed through.

Such a door is often wanted between dining room, kitchen, butler's pantry and other similar places. It is claimed to be noiseless in operation and to have many desirable qualities. It is well to be thoroughly informed on novelties like this.



Fire Fighting Show in New York

A new season for Madison Square Garden will be inaugurated October 2nd with a Fire Exposition, the historic exhibition remaining to New York for another season with all its old famous shows.

The Fire Prevention Show is a new exhibition that will demonstrate fire fighting and life saving by firemen with scaling ladders, life nets and ropes and will also have exhibits and demonstrations of automobile fire engines, fireproof building construction, automatic sprinklers and alarms, fire escapes, pumps, hydrants and every device in the fields of fire prevention and extinguishment.

A model fireproof loft building will be shown equipped with metal doors and windows, automatic alarms and sprinklers and a "Fire Wall," the fire wall being the recommendation of experts for loft buildings in which many people are employed and is a direct development of the Asch Building or Triangle Shirt Waist fire in which the lives of the women operators were sacrificed, a fire wall such as will be shown at the Fire Exposition would have saved all these lives irrespective of the fire escape accommodations on the building.

Statistics show that fires in the United States cost over

\$500.00 per minute and the Fire Show while presenting thrilling exhibitions of the work of firemen will also preach a strong object lesson in fire prevention in the business and the home in an effort to reduce the annual loss in this country of thousands of human lives and hundreds of million dollars of property value.

Fire Chiefs from all over the country will visit the Fire Exposition from October 2nd to 12th and a technical conference will be held daily in an effort to reduce the fire waste in which architects, builders, engineers, insurance experts, fire marshals and fire chiefs and other officials will participate.



Monster Veneer Knife

E. C. Atkins & Co. Turn Out a Remarkable Knife to Fill a Special Order

E. C. Atkins & Co. have just shipped from their Lancaster knife factory a very remarkable veneer knife, a picture of which is shown herewith.

In the letter accompanying this picture the Atkins people do not mention the exact dimensions of the knife, but it can readily be seen that it is "some knife."

This was ordered for a special slicing machine, and the great accuracy required in order to grind them straight and true, to temper them properly and to finish them so as to give results, proves the splendid facilities which the Atkins company enjoy.

Knives of this size are very rare, in fact it is said that only about twelve of them are consumed in the United States in any one year.



Sizable Veneer Knives

MODEST AMERICAN HOMES

Plans for Five Room Bungalow

PRINCIPLE DRAWINGS PRESENTED SHOWING CLEARLY DESIGN, ARRANGEMENT AND CONSTRUCTION OF MODEL BRICK VENEER OR TILE BUNGALOW

THE bungalow illustrated on this page was designed for Mr. B. W. Brady, Berwyn, Ill. The plans provide for construction using hollow structural tile, faced with a veneer of brick or cement plaster. As it turned out, however, Mr. Brady found the structural tile too expensive; and the bungalow has been built of ordinary timber construction.

This is an extremely attractive little place, not in any way over-ornamented but of pleasing, distinctive appearance because of skillful proportioning of its several parts.

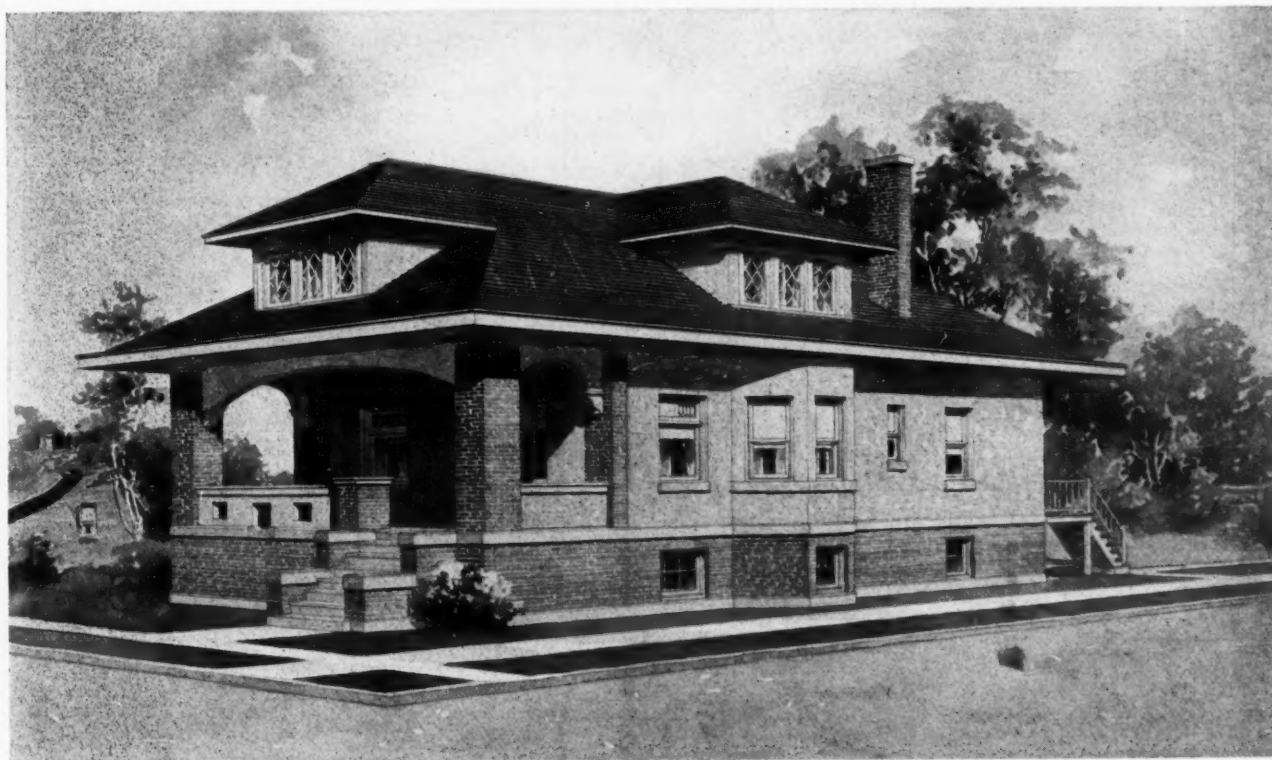
The building is 30 feet wide by 42 feet long, not including porches. On the first floor are four large rooms, living room, dining room, kitchen and bedroom besides reception hall, bathroom, pantry and clothes closets. The second floor is arranged for two finished rooms and a very large storage space.

The basement is nicely finished with water-tight

cement floor, set laundry tubs and warm air heating plant. In a house of this size, one of the smaller sizes of warm air furnaces works very satisfactorily; and the cost is small. The furnace is placed near the center of the basement and a few short runs of piping carry warm air to all the rooms.

Attention is called to the lighting of this bungalow. There is an electric light in the center of each room controlled by a switch placed conveniently at shoulder height on the wall near the door as you go into the several rooms. In the living room there are also side lights on each side of the fire-place. The plumbing system is very complete; and having all fixtures grouped closely together the plumbing cost is at a minimum.

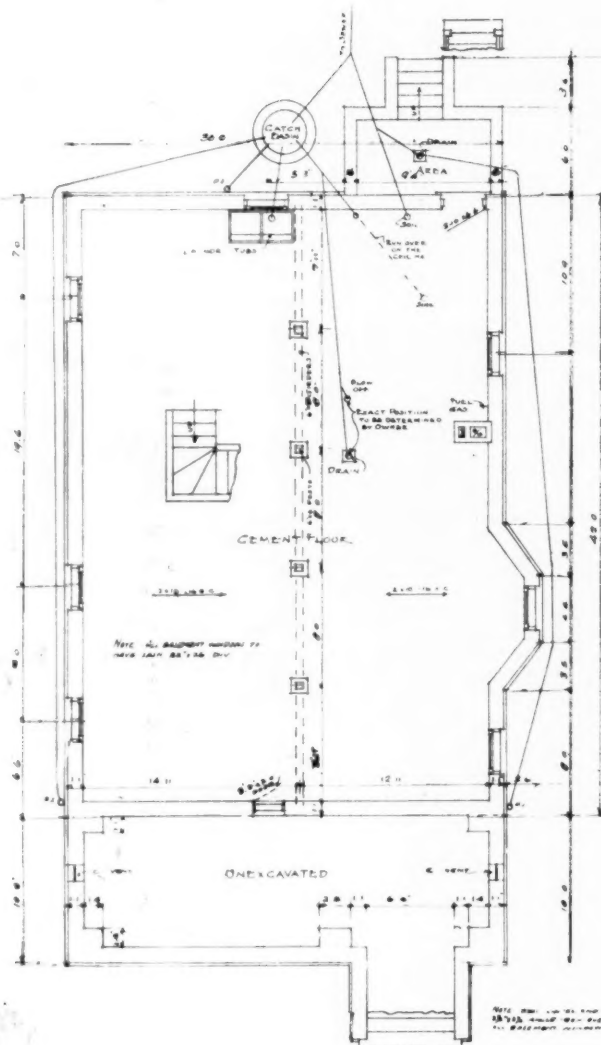
From the study of these plans, builders can get some good ideas for the arrangement of the popular bungalow type of dwelling.



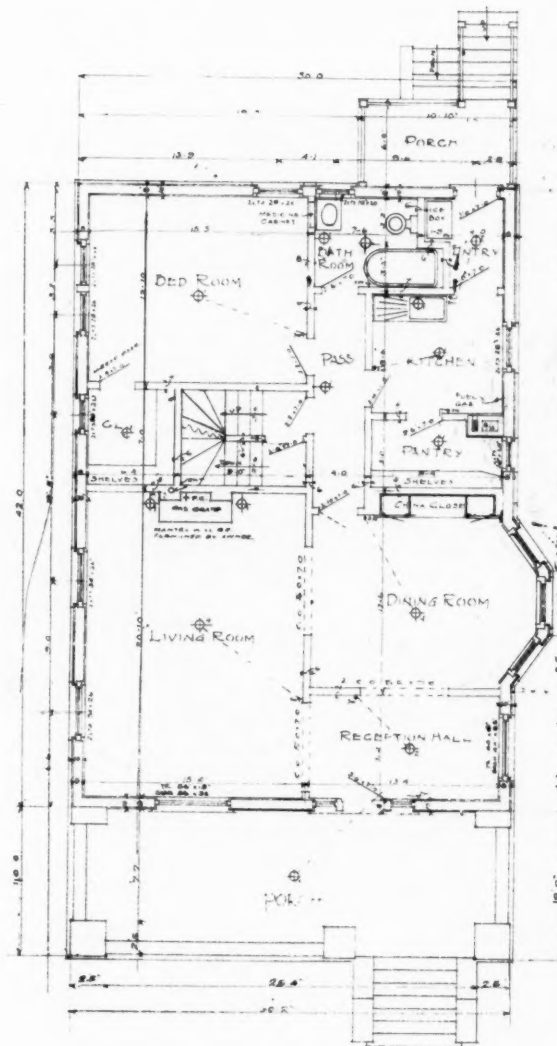
Bungalow of Strong, Simple Lines, Designed for B. W. Brady, Berwyn, Ill.
WORKING DRAWINGS FOR THIS HOUSE ARE PRESENTED ON THE 2 PAGES FOLLOWING



FRONT ELEVATION



BASEMENT PLAN



FIRST FLOOR PLAN

(Bungalow Shown on Page 83)

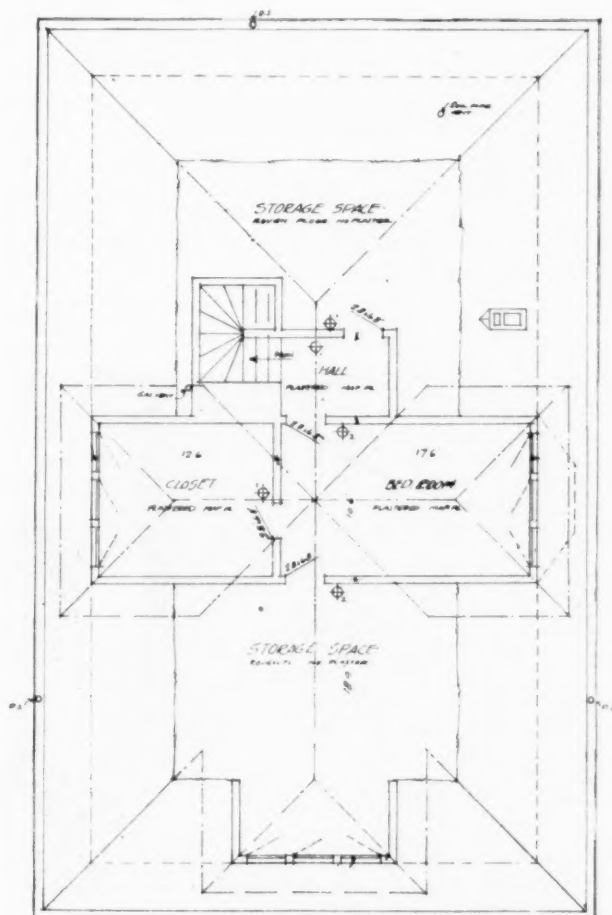


RIGHT SIDE ELEVATION

Looks Are Often Deceiving

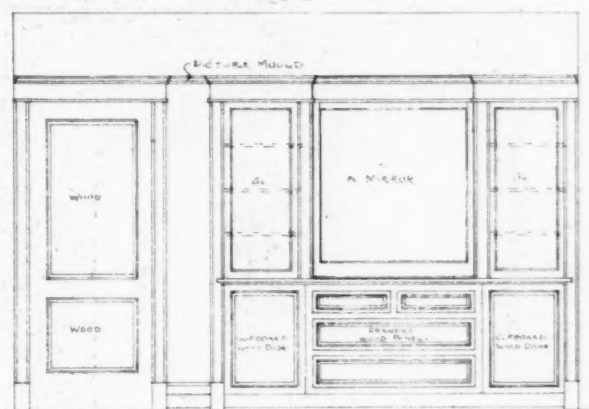
In a recent paper Mr. Leonard C. Wason, President of the Aberthaw Construction Co., Boston, stated that to the looker on of building operations it appears that there must be a clever organization with special knowledge at hand, and with trained mechanics working under careful supervision, in order to successfully handle the building of even a fair sized structure. But oftentimes if one examines he will find the methods

crude and extravagant, and that much of the knowledge employed is the result of tradition and custom, and not of keen original study. The sight of hod carriers carrying bricks to the upper story of a good sized building is very common, and yet it is a shrewd guess that a hoisting engine with a proper elevator and stages arranged so that brick could be delivered on wheel barrows would pay.

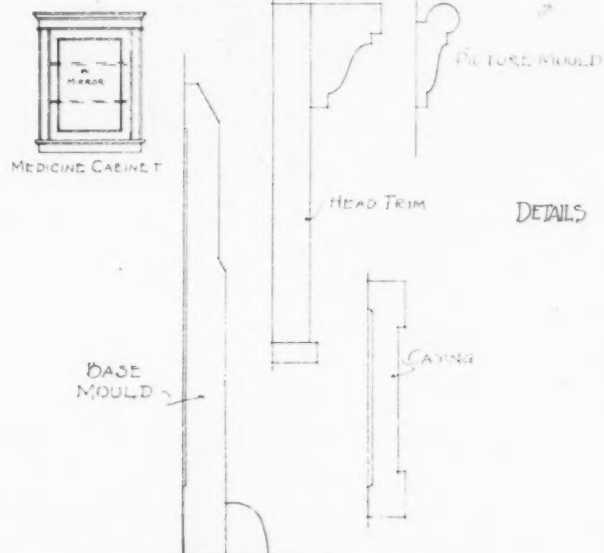


ROOF AND ATTIC PLAN

(Bungalow Shown on Page 83)



DINING ROOM LOOKING WEST



DETAILS OF INTERIOR TRIM

CORRESPONDENCE

Our Readers are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Carpenters and Builders

How to Build a Concrete Chimney

To the Editor:

Emerson, N. J.

I am herewith sending you several drawings of a form for a concrete chimney, which I will describe in the following lines; and I hope will prove interesting enough for publication in your magazine, which I consider the best dispenser published, of genuine information for the builder.

A concrete chimney is easy to construct and is better than any other kind of chimney and requires but little mechanical ingenuity to make the forms. First make a box of the size you desire, as shown in Fig. 1, which is made in two parts as shown, and joined at A and B. The inside of these parts

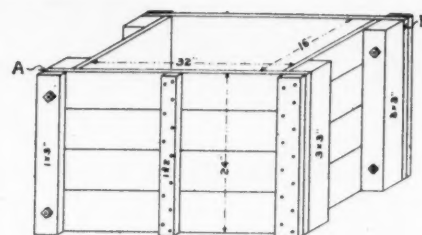


FIG. 1.

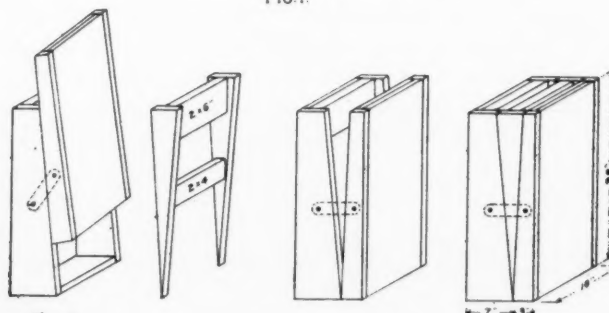


FIG. 3

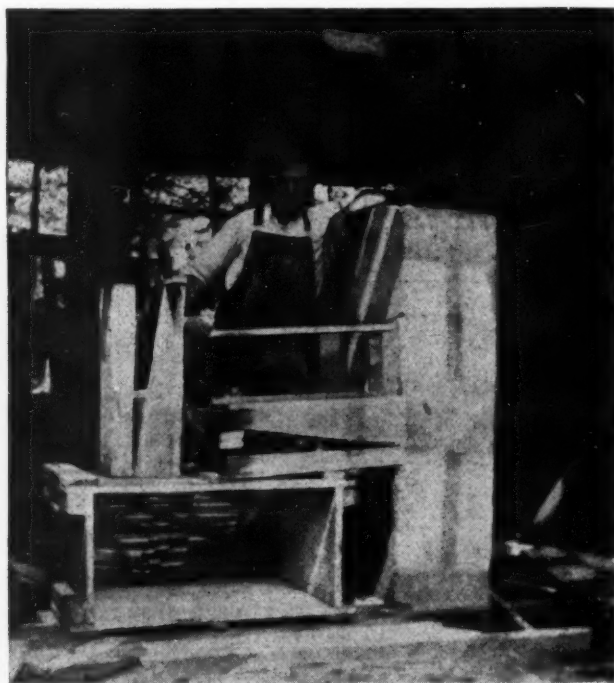
FIG. 2.

Outside Forms and Inside Collapsible Core

It takes about one hour of work, one-half bag of cement and three times as much sand for each section; some fine broken stone may be added if desired.

A forty (40) foot chimney will cost about \$25.00 including the labor in putting it up.

NATALE LUCIA,
Carpenter and General Contractor.

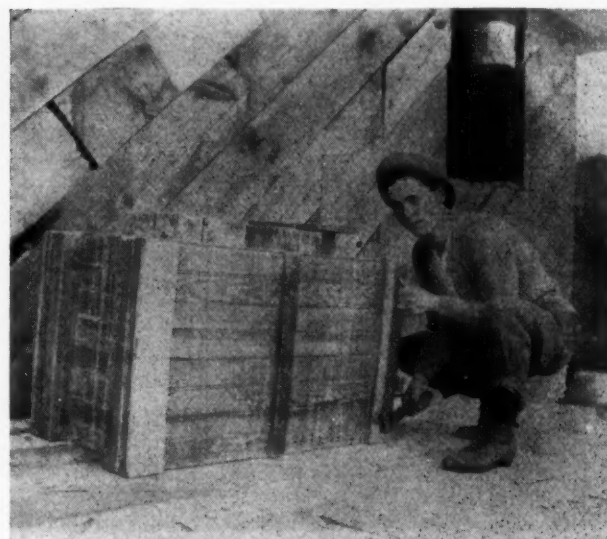


Concrete Chimney Built up Nearly to Roof—Showing Movable Forms to Left

should be lined with tin so as to give a smooth surface to the concrete. The parts should be fastened with two screws or bolts, as indicated in the drawings, and the box or outer form is complete.

The inside form for the opening is also easy to make. Make a form the size of the desired opening and then cut a V or wedge shape from top to bottom, as shown in Fig. 2 and properly frame the three parts together so that by removing the wedge piece, the other pieces can be easily removed as they will close in from the sides, as shown in Fig. 3.

Set the form in place and fill in around same and after one hour, loosen the four screws in the outer form and it is ready to fill again.



Tightening up Forms Before Filling With Concrete for new Section of Chimney

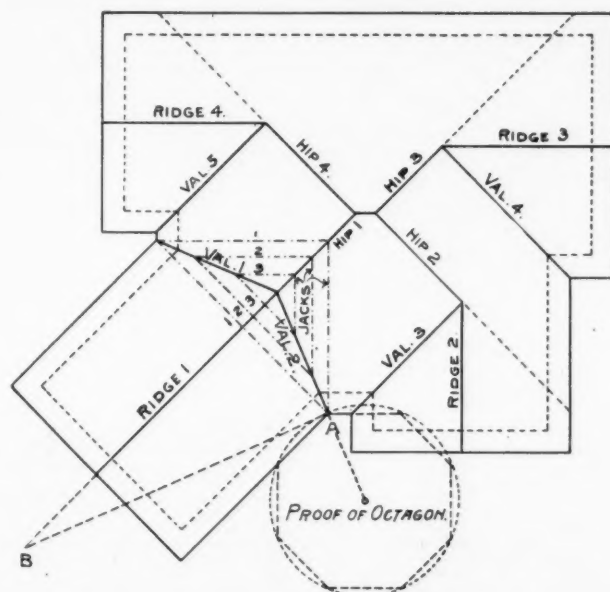
He Was Lost

To the Editor:

Benson, N. C.

The enclosed drawing is a sketch of a roof recently built in this place; but there are a few cuts that I, nor any one on the job, know how to obtain from a mechanical standpoint. Will you place it in your paper and show how to get the proper cuts and lengths, etc., with a steel square for the valleys, Nos. 1 and 2, also for the jacks, Nos. 1, 2, 3 and 4.

All of the roof is $1/3$ pitch, or 8 inch rise to the foot run. Hips 1, 2, 3 and 4 are full length. Valley Nos. 1 and 2 and



Turns Out to be Common Octagon Valley

ridge No. 1 rest on and against hip No. 1. The valleys Nos. 1 and 2 are neither 45 or 90 degrees from the plate, hence I am lost.

JACK LEG.

Answer: Why, Mr. Jack Leg, we are surprised at you and your crew. There is nothing about this layout that should bother you at all. The valley in question is simply an octagon valley. You never heard of such a thing before, did you? Well, that is what you have got here—just a common octagon valley. Consequently the cuts are the same as for an octagon hip and if it had been such you would more than likely have gone right along and framed it and thought nothing about it, but when it was backed up to you unexpectedly you did not recognize it and thought you had something hard to crack.

If it had been the other way, you would have known it and would have used 13 and 8 for the seat and plumb cuts. For the side cut, take the length of a line thrown out at right angles from the run of the hip to the intersection of the ridge line, as from A to B and the length of the valley and the side of the square on which the latter is taken, will give the cut for the unbacked valley. This is not only true in this case but applies to any position the valley may rest in.

Now, Mr. Jack Leg, don't forget it; better put it down in your block.

Now, as to the jack cuts, why they are just the same as for the octagon hip, except it requires a plumb cut at the lower end instead of a seat cut. Jacks are a part of a common rafter, the plumb cut being the same, and in this case 12 and 8 give it, and 5 and 14 $5/12$ give the side cut; the side of the square on which the latter is taken will give the cut.

As to the length of the jacks, the dotted lines in the plan represent their runs and being a part of a common rafter, their lengths may be found in the usual way.

A. W. WOODS.

Made Drafting Table Worth \$25

To the Editor:

Omaha, Neb.

In your August number, on page 54, you gave a description of a drafting cabinet, such as used in the Oak Park High School of Chicago. Through the courtesy of the Missouri River Lumber Co., of this city allowing me to use the machines in their mill, I built, in a day and a half, a cabinet just as near as possible like the one described in your magazine, and it is a beauty, being made of red oak with yellow pine panels. It beats any architect table I ever saw. It will take \$25 to get my cabinet.

I read with interest the "hopes and fears" of my fellow craftsmen; and the article by I. P. Hicks of this city, in regard to useless moves made by carpenters, appealed to me as very good. I find, in my business, too many carpenters are only looking ahead to five o'clock and Saturday noon "Pay." They seem to think that to shirk and kill time on the boss is perfectly proper and right, and to do so is the smallest kind of stealing, and they wonder why they can't draw the biggest wages and hold their jobs. I employed a man a few days ago and he carried cards enough for a whole deck! And some of the moves he made, and the square wrong end too, would make a mere apprentice ashamed of himself. I told him that the man that told him that he was a carpenter made an awful mistake and how he got the union card will probably always remain a mystery.

Wishing you continued success.

S. P. WOOLF.
Architect and Builder.

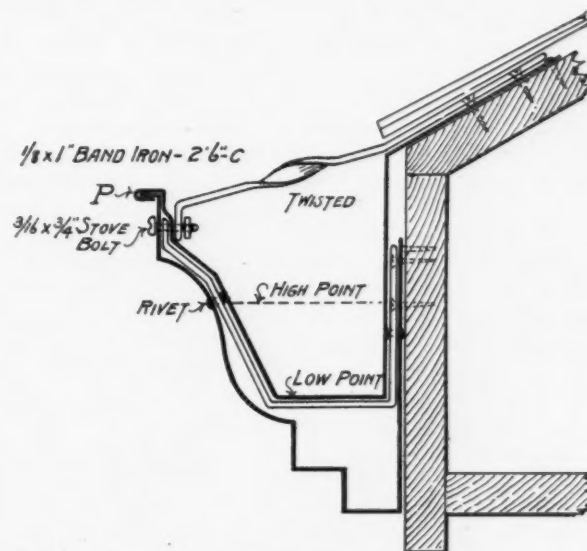


Practical Detail of Porch Gutter

To the Editor:

Brooklyn, N. Y.

Believing it would be of interest, I herewith present the manner in which a gutter should be constructed for the porch shown in August issue of the AMERICAN CARPENTER AND BUILDER. By an inspection of the accompanying sketch, it will be seen that the gutter consists of an outer shell, or rather the crown moulding of the porch cornice; an inner



Porch Gutter With Ornamental Covering

lining, which is graded so as to pitch the water discharged into it from the roof, to the outlets.

The shell and lining are made in handable lengths, to which is previously riveted the inner braces which, by the way, are also graded to suit from high to low points of the lining. The gutter is hung to the fascia board by nailing it here and there with roofing nails and then placing wood screws through

the braces as indicated in the drawing.

The lining is lifted into the shell allowing the roof flange part to rest on the roof boards, which are nailed to them.

The lock (P in drawing) is closed, and then the outer brace bolted through the inner brace and secured to the roof boards with two wood screws; the bolt being red leaded to make watertight.

J. HENRY TECHMACHER, JR.
Consulting Sheet Metal Worker.



Agreed! Who Will Start It?

To the Editor:

Morris, Ill.

I have been reading a great deal for the last few months about fast shingling and think it is a good discussion as far as it goes, but I think if we were to discuss other things in carpenter work, such as the best and fastest way to hang a door or window, also the easiest way to cut base and inside trim of doors and windows, also all kinds of outside work, it would be a great benefit to all of us.

Let us have as good discussion on other work as we have had on shingling and it will benefit us all.

In answer to J. F. Crabtree let him take a good paint remover and go over his floor with it using a putty knife to remove the varnish as fast as he applies the remover. Be careful to rub the brush with the remover one way only, then use a good floor scraper. Then he will have a splendid job. It never fails with me but you must use lots of hard work with it.

H. A. TAYLOR,
Contractor and Builder.



Three Big Sheds Raised

To the Editor:

Lancaster, Pa.

I am sending a photograph of frame work of three tobacco sheds erected for C. A. B. Zook of Lancaster, on his farm near Eden, Manheim township, Lancaster County.

As the accompanying newspaper clipping explains these three sheds were raised from 7 A. M. to 11:15 A. M.

"Three large sheds were successfully raised on Tuesday on the farm of Charles A. B. Zook, on the New Holland pike, at Eden. Two of the sheds were 36 by 75 by 18 feet and the other 56 by 60 by 18 feet and they were raised without a hitch under the direction of A. L. Herr, the Lampeter contractor. Work was begun at 7 A. M. and by 11:15 A. M. all the timbers were in place. About a hundred men assisted and they were entertained with a bounteous feast prepared by Mrs. Gerlach, wife of Mr. Zook's farmer. Mr. and Mrs. Gerlach wish to extend their thanks to all who assisted in the 'raising.' "

This is a fair example of the way we build tobacco barns in this section and I thought others might be glad to see the photo so if you can find place in your valued paper I would be highly gratified.

Your sincere and hearty supporter,

A. L. HERR,
Contractor and Builder.



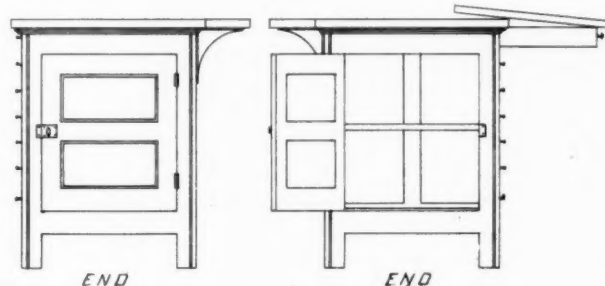
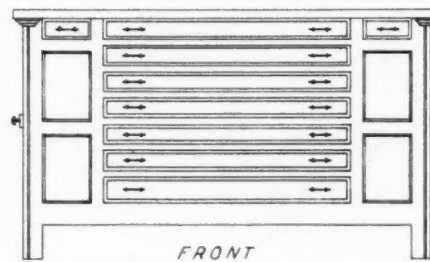
Good Drafting Table

To the Editor:

Cheboygan, Mich.

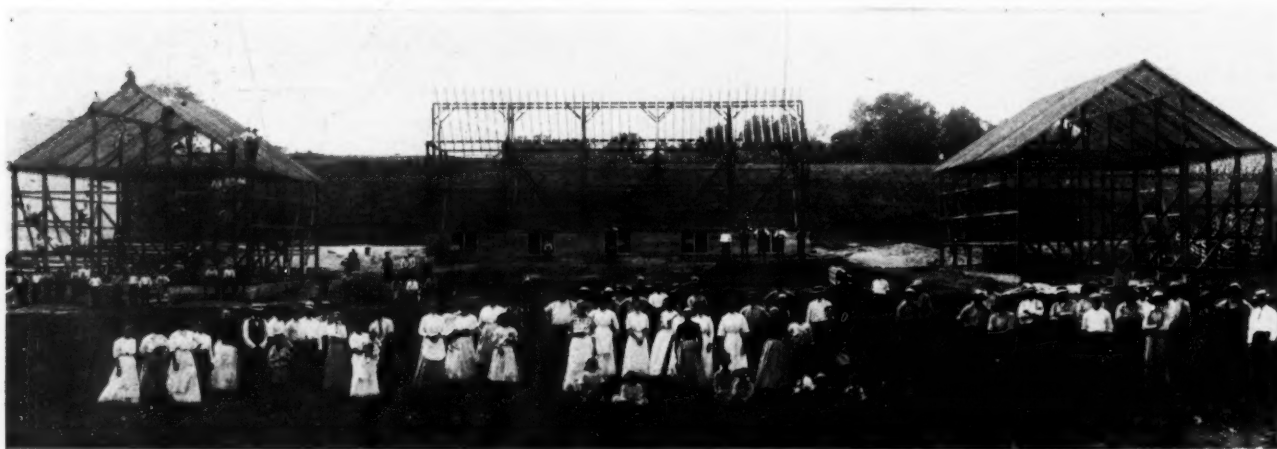
I am sending you drawings of what I think is a very handy drafting table.

Top is 3 feet 1 inch by 5 feet 6 inches by 1¾ inches thick,



Combined Drafting Table and Office Cabinet

body 2 feet 3 inches by 5 feet 3 inches by 3 feet 2 inches high. The seven drawers are large enough to take paper 24 inches by 36 inches lying flat and about 2¼ inches deep (inside), except the bottom one which is about 3¼ inches. The small drawers to have sliding till and are intended to hold tools. In each end of table are shelves for books as shown and are about 10¾ inches wide by 25 inches long. The drafting board may be put in one of the drawers when not in use. The top for detail work is in two pieces, the narrow one being held to place by dowels and iron brackets and may



Scene at Big Triple Barn Raising, Lancaster, Pa.; Mr. A. L. Herr, Builder

be removed when wanting to pass through an ordinary size door.

I am a charter member and have every copy bound in seven volumes and have prepared index to same.

ALBERT E. JEWELL.



To Join the Short Valley to a Longer One

To the Editor:

Great Falls, Montana.

Would like to have you treat, for the benefit of the younger element, the matter of top cut of short valley against long valley for the different pitches, and how they are to be placed, both unbacked.

J. A. WOODAHL.

Answer: When the pitch is the same on both parts (the gable and main roof), the run of the short valley is at right angles to that of the long valley just the same as the common rafter is to the ridge, as shown in Fig. 1 and requires no bevel at all, simply a plumb cut. But should one part be steeper than the other, then it will require a bevel cut across the top. If the gable is steeper than the main roof, the bevel will show as in Fig. 2. On the other hand, if the main roof is steeper, then it will show as in Fig. 3. To arrive at the angle, it is necessary to lay out a plan; and to do this, the novice will at once find that he has a problem on his hands of no mean proportions to get it just right.

In Fig. 4 we show how this may be accomplished, which we trust is sufficiently clear without going into further descriptive details.

Now then, to arrive at the cut in question, the short valley should be laid off full width; then square off the end, as shown at A B, and this distance represents the distance the

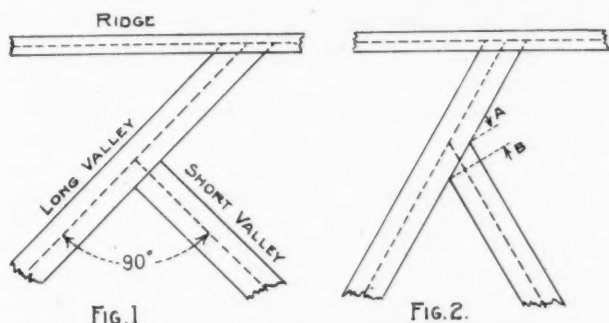


Fig. 1
Intersections of Short and Long Valleys When Pitches are Respectively the Same and Gable Steeper

plumb lines should be apart. They should be laid off on both sides of the valley and then cut diagonally across the back from one to the other. The plumb lines remain so whether the valleys are backed or unbacked.

It should be remembered that the working line is along the center of the back in either case and strictly speaking the backing of a valley is the hollowing out of the back to a V shape so that when in place, the ends of the roof boards will have a full bearing. When this is not done, only the lower edge of the roof boards at the miter will touch the

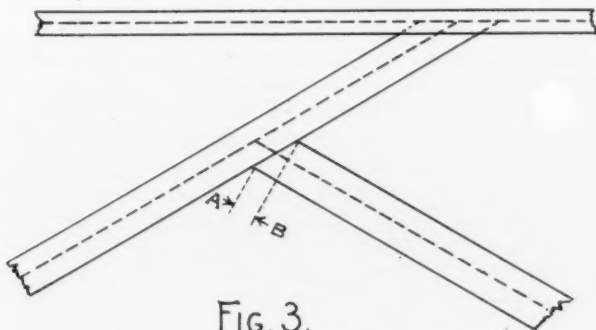


Fig. 3.
Intersection When Main Roof is Steeper than Gable

valley at the working line and consequently do not have a full bearing. This applies to the valleys. But that part of the long valley above the intersection of the short valley, which is usually called the blind valley, one edge of which would rise above the rafter plane, so that it would have to be backed one way from the center just as though it was a

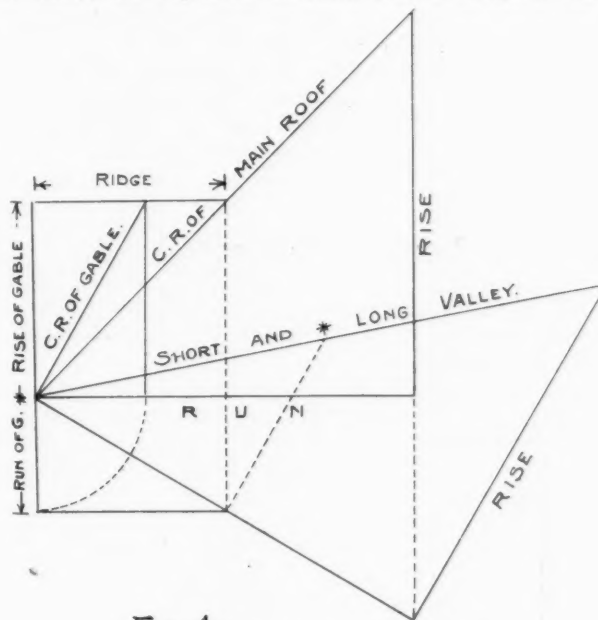


FIG. 4.

Diagram to Obtain Cuts When Pitches are Different

hip to bring it in plane, would have to be backed one way clear down to the edge of the rafter so that the center of the V backing will strike the center of the bevel at the blind valley.

For a steel square method, we refer to our articles in the Dec. 1907 number, also see the Jan. 1908 number.

A. W. WOODS.



Who Knows of Successful Large Concrete Work?

To the Editor:

Paul Smiths, N. Y.

I would like to ask if any one knows of concrete buildings of a large expanse of surface in roof or side walls, that show no cracks or hair lines that will later develop into checks, the said structure having been in use in the completed state for more than two years. I have worked on some that were considered the best, but unfortunately for me I have not been able to keep tab on this point of interest except where there were such faults in evidence. Bad news goes fastest and farthest. Is there good news of some faultless work in the concrete roof? The Detroit Trussed Concrete Steel Co. had a construction plan that impressed me as one that would remedy the evil; but I have not visited this plant since we finished the building, five years ago. The Roebing System I have seen, but not to examine after two or three years of changes of temperature of seasons and climates of this frosty section. Will you or some critical brother say if there is an example of a concrete building which has stood the test mentioned above for over two years without the appearance of these defects, and if so where it is and tell us what the plan of construction is.

I am pleased with the Best Building Paper in the World and read it, advertisements and all. Long may the AMERICAN CARPENTER AND BUILDER prosper and pursue the good work ably started.

W. E. McCASLAND.

Answer: We trust that some of the readers will be able to name a specific instance in which concrete has been used

successfully and without the development of cracks as stated in your letter.

Personally, we have never heard of this condition before, where the proper form of construction together with first class workmanship were used. There are many concrete buildings in Chicago, and as far as we know they are giving perfect satisfaction. Are you sure that the defects which you have noticed were not due to the use of too rich a facing mixture on the walls, or to too much trowelling when the surfaces were finished? If such was the case, we doubt if the cracks referred to were more than superficial, and doubt if they had any real depth into the structure.

EDITOR.



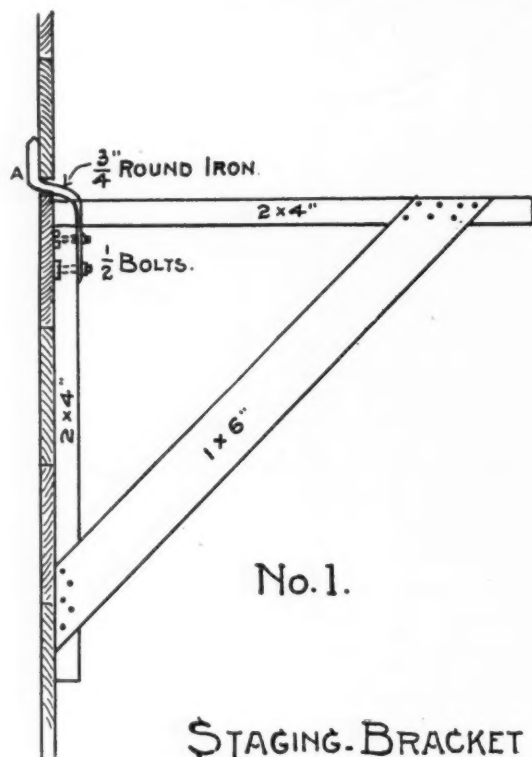
Three Useful Devices

To the Editor:

Vesper, Wis.

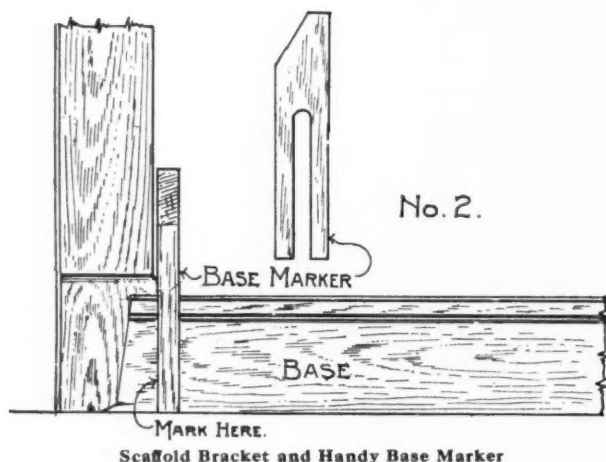
Here are some devices which may be of some benefit to brother carpenters to do faster work; of each of which I submit a diagram.

No. 1 is a staging bracket, which I use. It is simple in construction and inexpensive to make. The irons as shown marked "A" should be about $\frac{3}{4}$ inch round iron and bent



No. 1.

STAGING-BRACKET

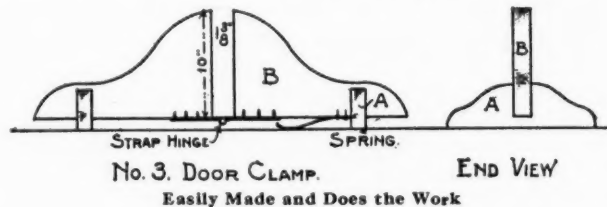


No. 2.

Scaffold Bracket and Handy Base Marker

so that they will slip back of the sheathing and extend up at least three inches. They need no nails at all and are absolutely safe, providing the material used in them is strong, clear stuff. Tamarack is alright for the purpose; use an inch bit for the irons to slip into.

No. 2 is a base marker which is easily made of $\frac{7}{8}$ inch stuff. I used walnut, as it keeps its shape better than most



woods do. Cut the piece about 11 or 12 inches long and $2\frac{1}{2}$ inches wide, then take a piece of base board and mark its width on the marker and rip out the piece. Slip the marker over the base and up to the base block and mark along the side next to the block and it will give a perfect cut.

No. 3 is a device for holding doors or sash while fitting them. This can be made very easily and for about 25 cents. It will pay for itself on the first job too; besides there is some satisfaction in being able to leave the work standing if called away temporarily to get a tool or look after other work. The drawing is self explanatory.

F. G. ROCKWOOD,
Contractor and Builder.



Speeds of Cutting Tools for Wood and Metal

To the Editor:

Los Angeles, Cal.

I would like to learn the speed of drills in different materials, speed of scroll and band saws, rim speed of carborundum and emery and grind stones for different materials, speed of circular saws and the surface speed of wood and metals in turning. Of course a person will often buy a ready built machine, and I have been thinking of a combination woodworker myself; but also often a shop owner wishes to buy a mandrel and rig up a saw, or to devise some special machine for his particular purpose, either to save money or the time required to order one that would suit his purpose.

W. C. SAWYER.

Answer: Your inquiry in regard to the cutting speed of the tool in various types of wood working machines, metal working machines and grinding machines, is answered in the following material in as close a manner as is possible, when bearing in mind that a general outline is desired. Conditions vary to so great an extent in different kinds of work, and with different materials, that it is difficult to give an exact speed for a given tool, which will be of best advantage at all times. The following speeds are necessarily approximate, and should be treated as such in your work. The only safe way to gauge the proper speed for a given tool in your given class of work, is to obtain a list of cutting speeds from the manufacturer of that particular tool.

The matter of speeds of circular saws, and of wood working machinery is a very delicate and often a dangerous proposition, and you should be guided only by the directions of the manufacturer. There is no general rule for the speed of saws of a given diameter, since saws even of the same diameter take different speeds, according to the gauge, quality, temper, style of teeth, timber to be cut, etc. It is often stated that circular saws should be run at such a speed that the teeth will travel between 9,000 and 10,000 linear feet per minute. The following table of speeds of circular saws will give you an approximate idea of the revolutions per minute for saws of different sizes.

Table of Speeds of Circular Saws

Size of Saw, Inches	Revolutions per Minute	Size of Saw, Inches	Revolutions per Minute	Size of Saw, Inches	Revolutions per Minute
8	4500	30	1200	52	700
10	3600	32	1120	54	675
12	3000	34	1050	56	650
14	2585	36	1000	58	625
16	2222	38	950	60	600
18	2000	40	900	62	575
20	1800	42	870	64	550
22	1636	44	840	66	545
24	1500	46	800	68	529
26	1384	48	750	70	514
28	1285	50	725	72	500

The foregoing table is figured on a periphery speed of 9,000 feet per minute, but saws for portable mills are usually run at a speed of about 450 revolutions per minute, and saws for steam feed mills from 600 to 900 revolutions per minute.

These values, as cautioned above, should be looked upon only as approximate, and treated with suspicion until verified by the manufacturer of the saw.

For band saws it is often stated that for wheels up to three feet in diameter, 4000 feet per minute, linear speed, is considered to be adequate for soft and medium woods; while for hard wood about 3500 feet per minute. For band saws with wheels over three feet in diameter, speeds may be increased.

In planer and jointer work, opinions seem to differ according to the type of machine used, but it seems to be fairly well agreed upon that in either machine, the cutting edge should travel at a speed of from 4,000 to 6,000 feet per minute.

The criticism given above in regard to consulting the manufacturer as to the proper revolutions per minute will apply as well to emery wheels as to saws. The following table will give an approximate idea of the proper revolutions per minute at which emery wheels of different diameters and thickness should be run.

Standard Sizes and Safe Speed of Emery and Corundum Wheels

THICKNESS OF WHEEL IN INCHES.															
Diam. in Inches	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{3}{4}$	3	3 $\frac{1}{4}$	4	Revolutions per Minute
1															18,000
1 $\frac{1}{4}$															14,000
2															10,000
2 $\frac{1}{4}$															8,500
3															7,000
3 $\frac{1}{4}$															6,035
4															5,300
4 $\frac{1}{4}$															4,700
5															4,200
6															3,500
7															3,000
8															2,600
9															2,300
10															2,100
12															1,750
14															1,500
16															1,300
18															1,150
20															1,050
22															950
24															850
26															775
30															705
36															520

Wheels made in sizes above heavy lines.

For metals, the speed of the cutting point or edge of the tool will vary according to the kind of metal to be cut, kind of steel used in making the given tool, depth of cut to be taken, and amount of feed taken by the tool at each revolution. An average cutting speed for planing steel is 20 feet per minute; and, for planing cast iron, 26 feet per minute. The speed for turning and for milling soft steel, or wrought iron, is about 48 feet per minute. Soft brass is often cut at the rate of 120 feet per minute. The above speeds refer to the

use of tools made from ordinary steel.

Where high-speed steel is used for making the tools, these cutting speeds may be increased, but same should be governed by the directions issued by the manufacturer of the particular brand of steel used. With some brands of steel a cutting speed as high as 175 feet per minute may be used on mild steel, where a cut not to exceed 1/8 of an inch in depth, and a feed of 3/64 of an inch is used. Generally better results are obtained with much lower speeds. As the depth of cut and feed is increased, less reduction in speed is required with the high-speed steels as compared with ordinary tools. The following table will give an idea of the speed, depth of cut, and feed often used with high-speed steels.

Speeds for High-Speed Steel Lathe Work

Metal	Cutting Speed Ft. per Minute.	Depth of Cut	Feed	Weight Removed per minute.
Mild Steel	145	1/4 inch	1/16 inch	5.8 lbs.
" "	45	1/4 "	1/16 "	7 "
" "	100	1/4 "	1/16 "	3.9 "
" "	50	1/4 "	1/16 "	10.4 "
" "	30	1/4 "	1/16 "	14 "
" "	72	1/4 "	1/16 "	5 "
" "	72	1/4 "	1/16 "	7 "

CHAS. E. PAUL, S. B.

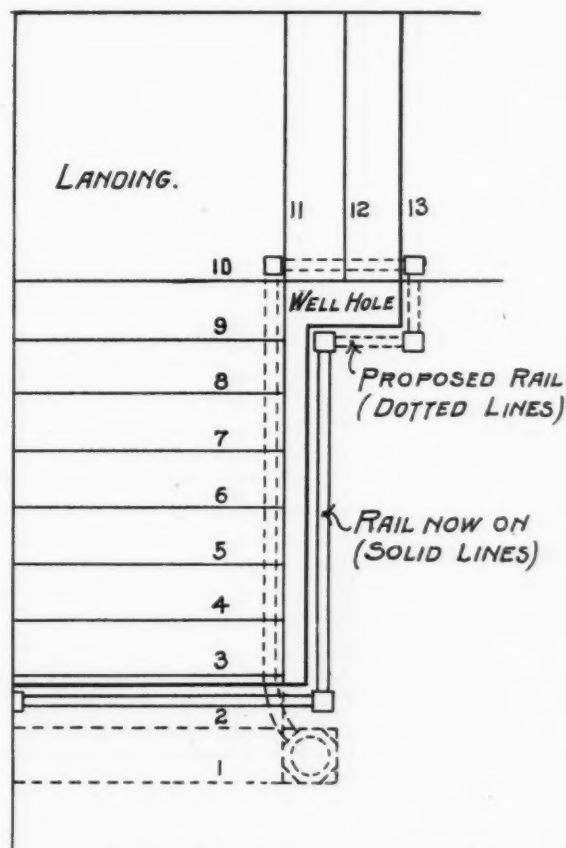


Where to Place the Balustrade

To the Editor:

Greenville, Maine.

You will find a rough sketch of a flight of stairs which I was recently called on to finish. You will notice by the sketch that I did not put the balustrade on the stair, as the party wanted to do that part later. So I thought I would see if some brother subscriber could let me know through the



What is Best Way to Arrange the Balustrade?

AMERICAN CARPENTER AND BUILDER, if I have the posts set in their proper places; also if there is any way to get around the corner and not have three posts set almost in a bunch and have a good looking job.

I have been a reader of your paper for about two years and look forward to the receipt of each issue with pleasure.

C. E. HARVEY.



To Develop the Angle Bracket

To the Editor:

Strathcona, Alberta.

I note in the May number of the AMERICAN CARPENTER AND BUILDER, Mr. Wm. C. Jasbury's way of obtaining the curve for the angle bracket for a square corner; it is good and correct.

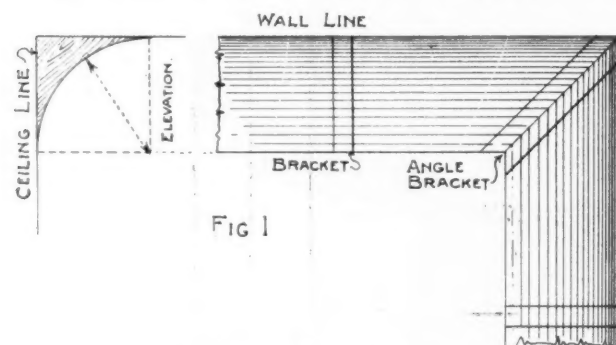
Am sending herewith two side brackets extending five inches down and out; the radius of the curve is $7\frac{1}{12}$ inches, and one corner bracket the radius curve of which is $8\frac{8}{12}$ inches.

Now, I would consider it a great favor if you would test the correctness of the angle bracket and publish same in your paper or let me know by mail. As Mr. Woods says the curve must be arrived at in another way, perhaps my way of testing it is wrong.

H. TAYLOR.

Answer: The above with the paste-board pattern brackets have been tested and we find that the variation amounts to about an eighth of an inch; the true curve being part of the way on the pattern and part of the way off, and is probably as near as could be arrived at with the compass; this for rough ground work that is to be covered with lath and plaster would pass without the irregularity being noticed, as there is a chance to even up, but after all is said and done, it is wrong and that is enough said.

We have on several occasions heard men contend that the curve for the angle bracket could be struck off from a common center and that they did it that way. But such claims, of



Section and Plan of Cove Mould

course, were by men not well up in geometrical construction, or they would not make such statements; for it is not in the nature of things to be that way.

We can probably illustrate this point more clearly than in any other way by supposing that we have a large cove mould full size of the desired curve of the bracket. Now, suppose we put it in a miter box and cut square across as though squaring the end, and then cut off pieces an inch thick, or whatever width is desired for the thickness of the bracket. These pieces would be just the same as for the wall bracket; and, by swinging the saw to the 45 degree angle and cutting off the end, cut another piece; and this will answer for the corresponding corner bracket. By reversing the saw to 45 degrees on the other side and cutting a like piece, and then nailing the two together, it would form the angle bracket with the proper backing to throw the face in perfect line with that of the wall brackets, as shown in Fig. 1. This is all plain enough, but it leaves the question from a development standpoint unsolved.

Now, let us go back to the beginning. That is what we should have done in the first place; but we just wanted to talk; we have to do it to earn our salary.

In Fig. 2 is shown a circle; its center is at O, which represents the starting point, and from this we lay out an angle of 45 degrees because that is the angle of the miter for a square corner. To the left of the line O-O° we lay out the section of the square end of a cove mould, as shown. Now, there are a number of ways of finding the corresponding curve; the most common way is to lay off parallel lines with the edge of the moulding, as indicated by the dotted line; and where these lines intersect the miter line, they change to right angles with same. Remember the depth of the mould

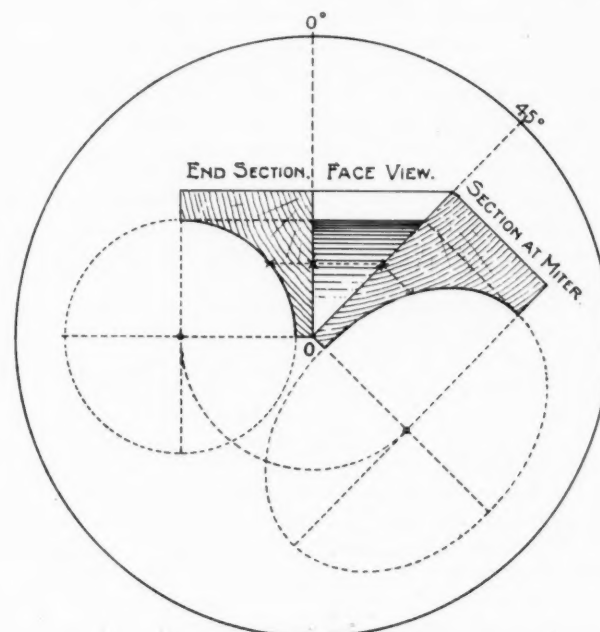


FIG. 2.

Philosophy of Corner Bracket Development

does not change, and therefore the distance between x x in the end section must be of like amount in the miter section. The more of these lines drawn, the more accurate the corresponding curve can be developed. Each line must be measured; and after this is done, the curve is found by running a full-hand curve through the measurement checks, and it will be found to be a part of a true ellipse, as shown.

From this it will be seen that it has an ever changing center and is therefore impossible to be correctly laid off from a common center and what is true of this applies equally as well to the curve bracket.

This is a beautiful subject and we are loath to close for we see in our mind's eye a mighty looming up of ellipses in connection with the steel square for any angle; but time and space forbid and we must ring off; however, we will come again.

A. W. WOODS.



Wants to Make Collapsible Pool Table

To the Editor:

Cincinnati, Ohio.

Have been taking AMERICAN CARPENTER AND BUILDER since November and find it very interesting. Now as the winter months are drawing near I would like to do something for pastime, therefore I ask for description of how to make a standard size collapsible pool table. Hoping to see it in next months edition, I remain,

HENRY KENNE.



Gordon-Van Tine Houses are Built in Every State in the Union

In every state an army of carpenters and contractors are building our millwork and builders' supplies. Over 100,000 houses in the United States and Canada are built with Gordon-Van Tine material because our plan permits builders to *save and make* big money.

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A flight of stairs, that has heretofore cost the carpenter or contractor from \$75 to \$90 can now be purchased from us, machine-finished complete and ready to set up, for from \$30 to \$40. The same percentage of saving is offered on our entire line of building materials.

Our **certified plans** are the work of our own architects of wide experience, who devote their entire attention to designing high-class residences. They are specialists in this class of architecture, and over 100,000 splendid homes have been built from the plans. We know of no firm of architects who have had such experience and training.

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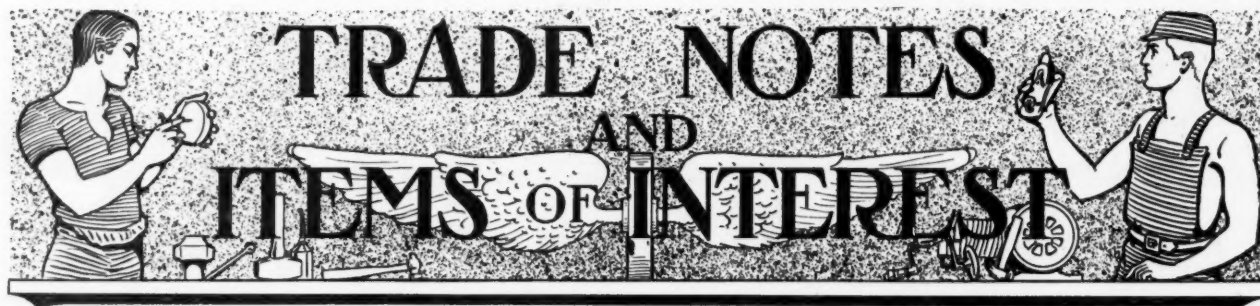
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A Subscriber Invents an Adjustable Crutch

We have received a very interesting set of patent drawings and specifications from one of our subscribers, Mr. Samuel E. Walton, of Mountainair, New Mexico. His invention is an adjustable crutch. The leg is made of metal and slides up into a hollow tube, a strong set screw holding it fast at any desired length.

This is an adjustable feature not hitherto obtainable. We have no doubt it will be appreciated. The hand rest is also adjustable, making this a crutch that any size person can use with comfort. Mr. Walton writes that he has been a reader of the *AMERICAN CARPENTER AND BUILDER* for a long time and would not be without it. He would like to hear from other readers who are interested in this adjustable crutch.



The Crescent Roofing Nail

The Crescent roofing nail has been manufactured since 1868 by the Crescent Brass & Pin Company of Detroit, Mich., who were the originators of the center joint roofing nail.

Crescent roofing nails are riveted both sides of head and

will not leak as they are in one piece. As they are thick, they will not rust out. The heads are large and they have more bearing on the roofing which prevents them from tearing off.



Large Head Roofing Nail

Crescent roofing nails have a good true point and enable the roofer to make good straight laps. Their large head, well riveted, prevents them from being driven through the roofing. They are made in 1-inch and 1 3/8-inch lengths.

For circular illustrating and describing Crescent nails address the Crescent Brass & Pin Company, Detroit, Mich.



C. R. Ross Joins Boston Ad. Agency

Walter B. Snow, Publicity Engineer, 170 Summer Street, Boston, Mass., has added to his staff Mr. Chester R. Ross, who will act as manager of the addressing and mailing department. Mr. Ross brings to this position an extended experience covering three years with the Griffin Wheel Co., four years with the Boston Transcript, and a considerable period as salesman in various lines of industry.

THE ONLY SATISFACTORY WALL BOARD

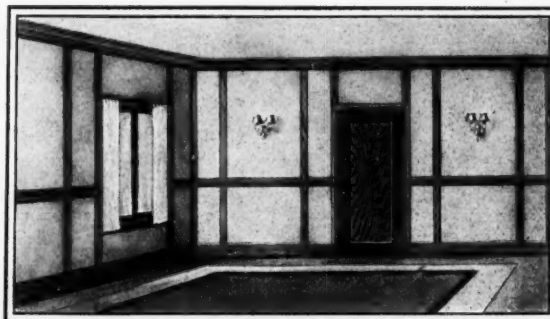
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BESTWALL MANUFACTURING COMPANY

FIRST NATIONAL BANK BUILDING—
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IN ALL LENGTHS UP TO 12 FEET
CARRIED IN STOCK

CHEAPER
THAN WOOD,
STRENGTH
AND
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CONSIDERED



A-5
Special Cap

FIRE AND
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PRACTICALLY
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Immediate shipment will be made on orders for cast iron columns from our stock as follows:

Net Prices F. O. B. Foundry, Coshocton, Ohio

				A-3 Plain Cap and Base	A-4 Moulded Cap and Base
5 inch columns	12 feet long	each	\$ 6.40	\$ 7.10
7 "	"	12 "	"	9.60	10.60
9 "	"	12 "	"	13.00	14.50

The above prices are given on a column 12 feet long over all including cap and base. For columns of different lengths deduct per foot

5 inch columns	\$.25
7 "	"	.35
9 "	"	.50

A-5 Special Cap, each, 5-inch \$1.75, 7-inch \$2.50, 9-inch \$3.25

Prices on larger size columns on application.

A-3 Plain Cap
and Base

A-4 Moulded
Cap and Base

Safe Load in Pounds for Cast Iron Columns

Made Up from Base and Top Castings	5-inch Column		7-inch Column		9-inch Column	
	Cap and Base 10 in. Square		Cap and Base 12 in. Square		Cap and Base 14 in. Square	
Length	Approximate Weight	Capacity	Approximate Weight	Capacity	Approximate Weight	Capacity
6 Feet	135 Pounds	38,400	222 Pounds	71,800	288 Pounds	90,500
6 Feet 6 inches	145 "	37,000	239 "	69,800	310 "	90,500
7 Feet	155 "	35,600	256 "	69,200	332 "	90,500
7 Feet 6 inches	165 "	34,200	273 "	67,600	354 "	90,500
8 Feet	175 "	32,900	290 "	65,500	376 "	90,500
8 Feet 6 inches	185 "	31,500	307 "	64,500	398 "	90,500
9 Feet	195 "	30,300	324 "	62,900	420 "	90,500
9 Feet 6 inches	205 "	29,000	341 "	61,300	444 "	89,100
10 Feet	215 "	27,800	358 "	59,700	466 "	87,400
10 Feet 6 inches	225 "	26,600	375 "	58,100	488 "	85,700
11 Feet	235 "	25,500	392 "	56,500	510 "	84,200
11 Feet 6 inches	245 "	24,400	409 "	54,900	532 "	82,500
12 Feet	255 "	23,300	426 "	53,400	554 "	81,000

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HARRISON STREET BRIDGE, CHICAGO

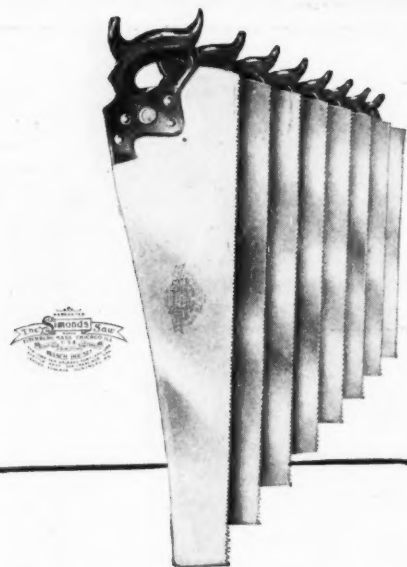
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Simonds
Blue Ribbon Hand Saw

You are getting the best saw the market affords. No need to pay more than that for a saw. The expert Carpenter wants the best Saw and tools to enable him to best do his work.

Now, the Simonds Blue Ribbon Brand Hand Saw is made of Simonds Steel. That is a sufficient guarantee that the Saw is evenly tempered throughout all parts of the blade and that the teeth are made of a material which will take just the right amount of set and hold a cutting edge in nice, smooth shape throughout the longest time of cutting.

A saving of power, because the Saw cuts easy. A saving of time because it requires less filing.

An illustration does not show all the good features of this Saw. We want you to see a sample. 26-in. length, \$2.50. Made sway-back and straight-back, either style you prefer. Furnished in either rip or cross-cut tooth. Any desired number of points to the inch. Ask your Hardware Dealer or write us.

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It is pleasing to note that the Plastergon Wall Board Company is well up in the lead with the manufacturers who have adopted the resolution of cooperation with dealer, builder and consumer. It means simply the perfect method of standardizing a product of known worth.

Their advertising is concentrated locally so that each individual dealer gets the maximum amount of benefit from the publicity. The advertising itself is designed to establish better relations between the three people most concerned, dealer, builder and consumer.

But to the carpenter and builder the most important feature of Plastergon service is the benefit which he may derive from their Service Department. This department is conducted for the purpose of encouraging the use of beautiful and attractive designs for interior finishes. Many contractors and builders are glad to avail themselves of this free service bureau for they know that their requirements will receive careful attention and prompt handling by this department. One of their main "helps" to the builder is the many suggestions which they can give him for new and valuable uses for Plastergon.

Almost every day there comes to light a new use for this remarkable and more than successful substitute for lath and plaster. These new uses are tabulated and kept ready at hand to help solve the problems of the carpenter and builder.



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Every carpenter and contractor will find it a great convenience and help to keep in touch with these new "kinks" in building. A card with your address and a description of the job you are planning will bring their efficient help to you when you need it most, all free of charge.

Now a word about the board. It is made of the finest wood plup obtainable. It is perfectly sized and seasoned in a factory where scientific methods prevail throughout. It is a chemically treated wall board and this feature alone makes it valuable as a fire retarder and insures its absolute imperviousness to moisture under all practical tests and conditions.

Every panel is marked with the well known Plastergon trade mark which insures and guarantees it both to the trade and to the consumer.

Summing it up, it is the spirit of fair dealing, cooperation and good goods that has placed the Plastergon Wall Board Company, Tonawanda, N. Y., among the foremost manufacturers of wall boards in the country.

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BIRCH gives *lasting satisfaction* for all interior work. Fine grained and hard, it takes a brilliant, satiny polish in natural red or yellow tones, while all stains are applied easily and permanently.

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BIRCH finish does not warp or shrink out of place, neither does it mar or lose its color. BIRCH DOORS, CASING, BASE, TRIM and FLOORS are pleasing and durable.

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BIRCH costs less and is worth more than any one of half a dozen expensive imported woods.

WRITE TODAY for our Illustrated Birch Book "C." This book shows plans of buildings of all kinds and gives many harmonious decorative schemes for interiors. It tells why and where "BIRCH" can be used to the best possible advantage. Sent postpaid on request.

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WAUSAU, WIS.

Sharp Rotary Ash Receiving System

It is apparent to all users of house-heating furnaces that the present method of caring for the ashes by shoveling them from the ash-pit of the furnace into cans standing on the cellar floor, or piling them on the cellar bottom, is a very

is known as the Sharp Rotary Ash Receiving System. It is now in quite general use.

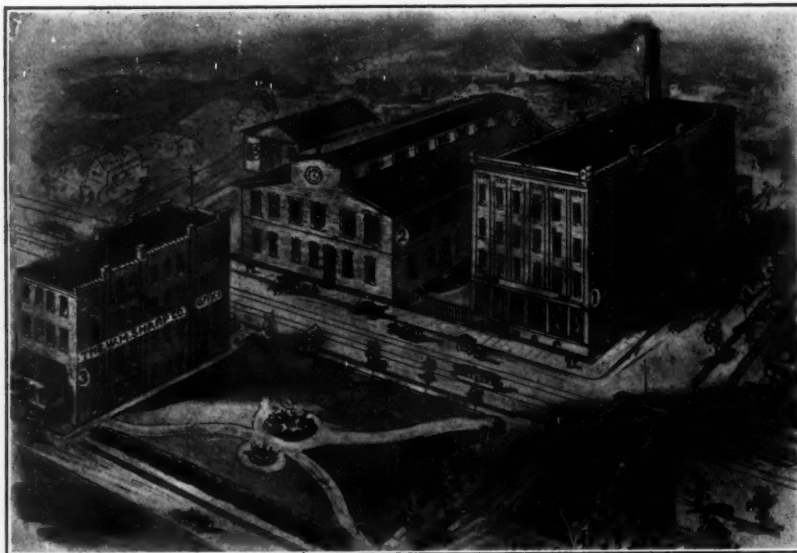
This system of caring for ashes is for use in dwellings, factories, public buildings, apartment houses, churches, school buildings, stores, libraries, and institutions of every description where boilers and furnaces are used.

A circular pit is excavated in the cellar bottom in front of and projecting somewhat under the furnace. This is lined with cement to receive a series of specially constructed galvanized iron cans of the capacity of the ordinary ash can, arranged to revolve on a central perpendicular shaft, by means of a lever in such a manner as to bring one can at a time directly beneath the ash-pit of the furnace. The whole device is covered by stationary top plates on a level with the basement floor, provision being made to receive the ashes, etc., through an opening in the floor of the furnace ash-pit. One of the floor plates being removable, permits of the cans being lifted out when filled.

A full description with instructions for installing accompanies each outfit when sent out.

It should be thoroughly understood that the Sharp Rotary Ash Receiving System may be installed at any time in either new or old houses before or after the furnace has been set up. If the furnace is in use it is not necessary to let the fire go out while installing. Neither does it make any difference whether the basement floor has been concreted or not.

The Sharp Rotary Ash Receiving System is not expensive.



Plant of the W. M. Sharp Co., Binghamton, N. Y.
Home of the Sharp Rotary Ash Receiver

disagreeable and unsatisfactory method. In this process the air is filled with dust, finding its way to the living rooms above, and there settling on furniture and other furnishings.

Dr. Warren M. Sharp, 300 Park Ave., Binghamton, N. Y., has perfected means to correct these conditions, and the same

J-M Transite Asbestos Shingles

Last as Long as the Building Never Need Attention

In durability J-M Transite Asbestos Shingles are not equaled by any other form of shingle manufactured. They are composed of pure Asbestos and the best grade of Portland cement—two fireproof minerals. And as these shingles harden and improve with age instead of deteriorating as other kinds do, they will last as long as the building on which they are placed.



Residence of C. B. Manville, Pleasantville, New York
Covered with J-M Transite Asbestos Shingles
Betts & Hosmer, Architects, Milwaukee, Wis.

J-M Transite Asbestos Shingles are moulded into a solid, compact mass and will not curl or disintegrate.

They are fireproof, waterproof and practically wear-proof, and require no attention after being laid.

We furnish them in three colors—natural gray, Indian red and slate.

Write Nearest Branch for Descriptive Booklet and
Our Special Proposition to Dealers

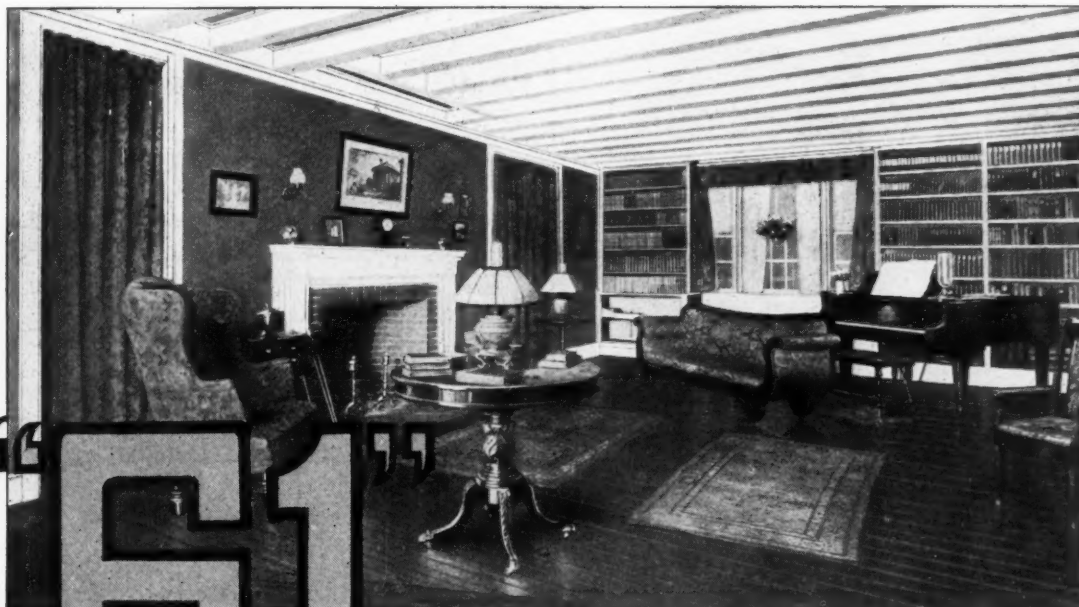
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"61" FLOOR VARNISH

THE traditional idea of the inefficient floor varnish has been overcome by "61" Floor Varnish. It is the modern conception of floor varnish — perfect — smooth — lustrous, unmarred by heel or wear — developing the intrinsic beauty of the natural wood grain.

Architects who specify "61", specify Vitralite, *The Long-Life White Enamel*, too. There's distinction in the long service of its permanent porcelain-like white finish.

Samples, Both Liquid and on Wood, Will Be Gladly Submitted.

Our Architectural Service is most complete and always at your command. Please feel free, at all times, to avail yourself of this co-operation.

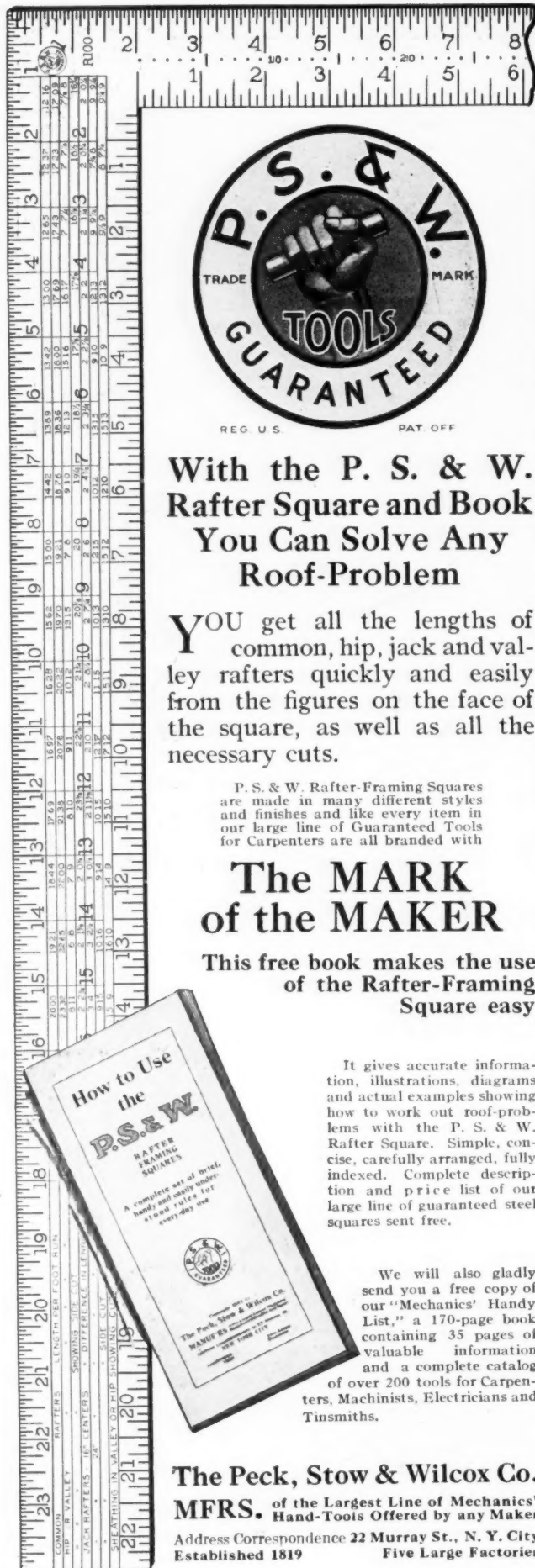
Pratt & Lambert Specifications for all wood finishes will be found in 1912 Sweet's Index, pages 1668-1669.

Pratt & Lambert-Inc., 110 Tonawanda St., Buffalo, N. Y.

Vitralite

The Long-Life
WHITE ENAMEL

When Writing Advertisers Please Mention the American Carpenter and Builder.



P. S. & W. TOOLS
TRADE MARK
GUARANTEED
REG. U.S. PAT. OFF.

With the P. S. & W. Rafter Square and Book You Can Solve Any Roof-Problem

YOU get all the lengths of common, hip, jack and valley rafters quickly and easily from the figures on the face of the square, as well as all the necessary cuts.

P. S. & W. Rafter-Framing Squares are made in many different styles and finishes and like every item in our large line of Guaranteed Tools for Carpenters are all branded with

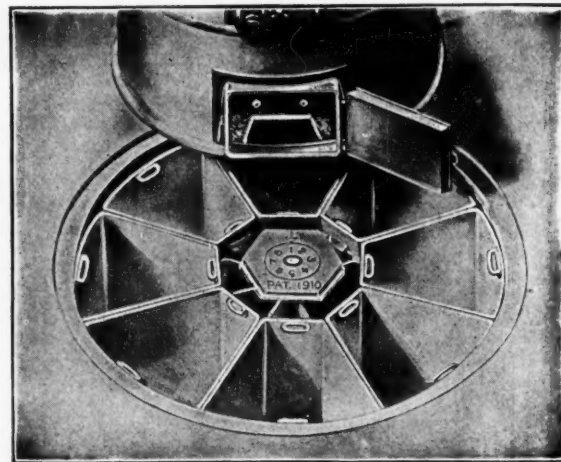
The MARK of the MAKER

This free book makes the use of the Rafter-Framing Square easy

It gives accurate information, illustrations, diagrams and actual examples showing how to work out roof-problems with the P. S. & W. Rafter Square. Simple, concise, carefully arranged, fully indexed. Complete description and price list of our large line of guaranteed steel squares sent free.

We will also gladly send you a free copy of our "Mechanics' Handy List," a 170-page book containing 35 pages of valuable information and a complete catalog of over 200 tools for Carpenters, Machinists, Electricians and Tinsmiths.

The Peck, Stow & Wilcox Co.
MFRS. of the Largest Line of Mechanics' Hand-Tools Offered by any Maker
Address Correspondence 22 Murray St., N. Y. City
Established 1819 Five Large Factories



Ash Pit of Heater With Sharp's Rotary Ash Receiver
(Showing Cover Plates Removed)

moreover, there is a special discount to builders, that readers of the AMERICAN CARPENTER AND BUILDER can get the advantage of. Write to W. M. Sharp, 500 Park Ave., Binghamton, N. Y., at once and investigate this.



The Rhyme of the Shingle Nailer

We have the following "poem" from the Pearson Mfg. Co., Robbinsdale, Minn., who inform us it was sent them by one of their Ohio friends who appreciates the Pearson's Shingle Nailer:

Have you seen Pearson's Shingle Nailer?

Why, it's almost alive.

It is indeed a never-failer,

And lightning on the drive.

Of shingle-nailing it's the master,

So simple is its plan,

It sets the nails to drive much faster

Than several shinglers can.

The Shingle Nailer automatic,

That has so famous grown,

It never is a thing erratic,

And not a hitch is shown.

Of all slick tools it is the slickest,

It's little and most light,

Of all things quick it is the quickest,

And sets the nail just right.

It takes the labor out of shingling;

It makes it real fun,

No fingers are with frost a-tingling—

You'll work with mittens on.

A nail for you stands ever ready,

You quickly drive it home,

For its delivery's always steady,

And very fast they come.

Through tin or sheet iron nails are driven,

Howe'er the pitch may stand,

And then it sets them nice and even,

And seems like sleight of hand.

Most every carpenter is its hailer,

It fills a long-felt want;

This Automatic Shingle Nailer

Is surely at the front.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The "ABC" of BEAVER BOARD Construction

The tenth of a series of twelve monthly talks to carpenters about the practical use of *Beaver Board*, the pure-wood-fibre wall and ceiling material that is durable, economical, artistic; has none of the disadvantages of lath, plaster and wall-paper; and is appropriate to any type of building new or old.*

Beaver Board is essentially a proposition for Carpenters and Builders

CHAPTER X

Beaver Board in Panel Treatment

YOU carpenters have noted the ever-increasing use of the panel in all types of architecture—in the home, the store, the club—wherever a harmonious and naturally artistic effect is desired.

Panel-treatment lends itself with unequalled facility to a marvelous variety of design and color. Its very nature admits of flexibility of treatment. Architects, appreciating the endless possibilities of the panel, are using it more and more, where unique and distinctive decorative effects are sought for.

With the panel assuming such an important part in the tendency of modern design, it is exceedingly important that you be familiar with the possibilities of Beaver Board in panel design, for Beaver Board is a money-making proposition for the carpenter who knows its possibilities.

Beaver Board Panel Possibilities

Every kind of design is possible with Beaver Board. Put up in a number of sizes, its application is speedy and economical. The use of dado, frieze and wainscoting is optional. Beautiful and artistic results are obtainable either way.

Great success also attends the use of Beaver Board between ceiling joists, with false beams or battens bringing out the panel effect.

The cream-colored pebbled surface of Beaver Board offers the ideal surface for the application of the popular, soft, restful tints. These color schemes are limited only by the originality of the builder. Panels and decorative strips may match the furniture in dull oak, mission, antique, etc., or soft greens, reds and the like, lend warmth, especially when set off by contrasting oak or cream-white battens.

Before applying the paint, Beaver Board should first be sized with a varnish size, slightly thinned. Paint the Beaver Board before fastening the battens. Two coats of any good lead-and-oil paint, or any standard manufactured paint, make a finished bit of work that graces either the mansion or the cottage—and inexpensively too.

Our Designing-Department—service absolutely free—is ready to make detailed suggestions as to design, application, etc. To avail yourself of this department puts you under no obligation whatever, and enables you to give your clients the ideas and suggestions of experts. This service is for you—profit by it.

While the possibilities opening before you are fresh in your mind send for "Beaver Board and Its Uses," and let us show you why the carpenter who knows Beaver Board is always busy.

*These chapters began in the January number. If you missed back chapters, write us—we'll mail them to you.

The Beaver Companies

UNITED STATES: . . . 440 Beaver Road, Buffalo, New York
CANADA: . . . 380 Wall Street, Beaverdale, Ottawa
GREAT BRITAIN: 4 Southampton Row, Russell Square, London

When Writing Advertisers Please Mention the American Carpenter and Builder.



Illustrating the interior of the bungalow of Mr. P. R. Friedel, Memphis, Tenn. Note the attractive and artistically paneled walls.



A Beaver Board reading-room in the Motor-Boat Club Rooms of Buffalo.

BEAVER BOARD

PURE-WOOD-FIBRE WALLS AND CEILINGS

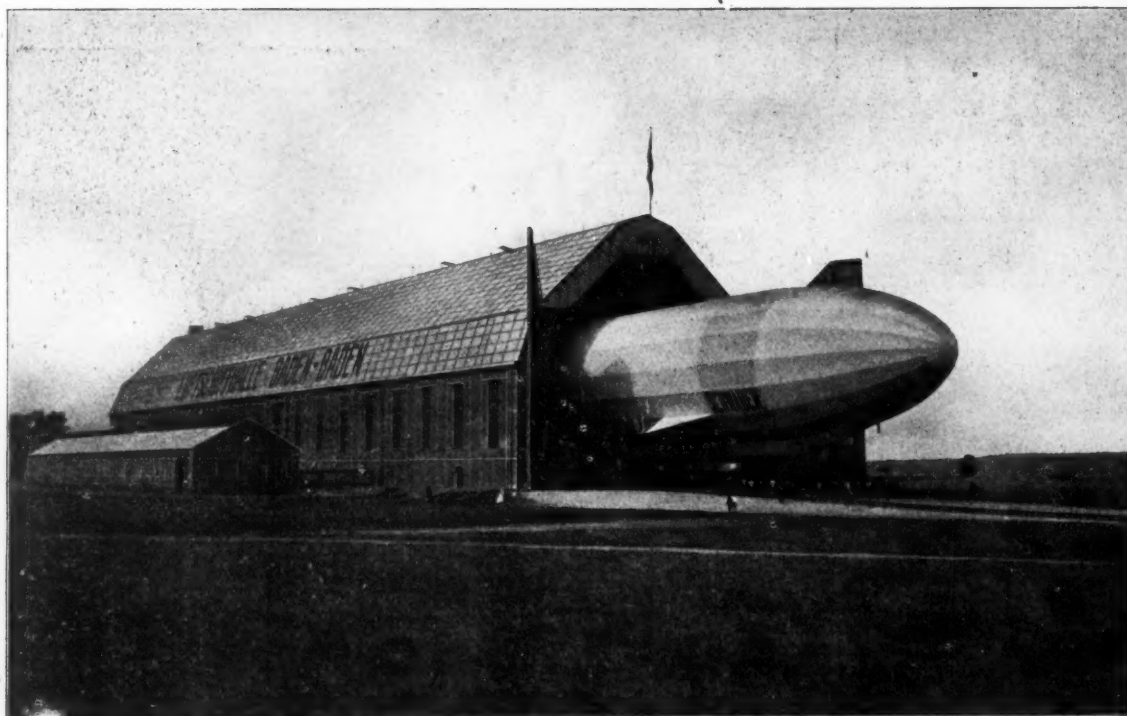
Trade Mark



GENUINE BEAVER BOARD has our registered trade-mark on the back of each panel and sample. It has also a light-cream color all the way through, that comes only by the use of sanitary, durable PURE-WOOD-FIBRE. Insist on seeing both trade-mark and color before buying.



Effective Beaver Board panel-treatment of a salesroom of the Maxwell E. Briscoe Co., Buffalo, N. Y.



The Dirigible Balloon "Schwaben" Emerging From the Hangar, Which is Built of Fireproof Asbestos Building Lumber

An Interesting Industry

On the Bethlehem Division of the Reading Railroad, about fifteen miles north of Philadelphia, is located a manufacturing plant using approximately 100,000 barrels of Lehigh Portland Cement per year for roofing purposes. The progress made during the past seven years by the manufacturers of

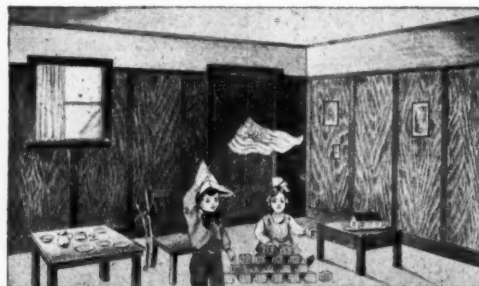
Asbestos "Century" Shingles is forcefully illustrated by the one hundred thousand barrels of cement used.

Until the Fall of 1905, the Asbestos "Century" Shingle was an absolutely new, untried quantity in the United States. At that time, the Asbestos Shingle, Slate and Sheathing Company, a corporation closely affiliated with Keasbey & Matti-

You Save the Expense and Bother of Painting,
Papering or Decorating if you use

BIRD & SON'S WALL BOARD

Comes to you as a finished product in an attractive reproduction of either plain or quartered oak. The batten strips of the same material make most attractive panels and relieve you of the necessity of purchasing wooden strips separately. Waterproofed on both sides to prevent warping and buckling, it is thoroughly practical. You can improve any house—new, old or in process of construction, by the use of this modern inside finish.



Branch Offices:

New York
Washington, D. C.
Columbus, Ohio

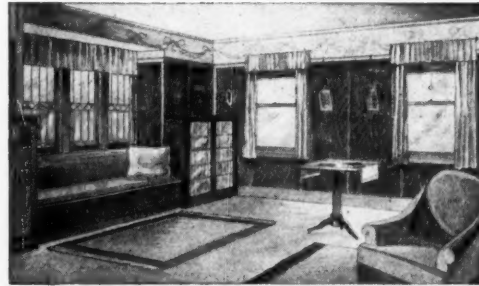
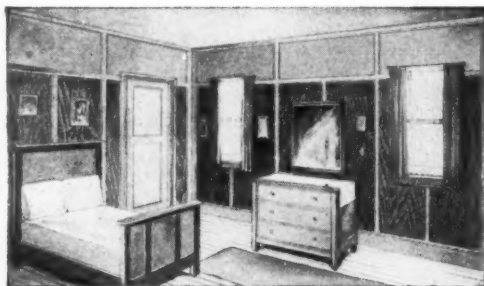
F. W. Bird & Son, East Walpole, Mass.

Established 1795

Canadian Plant, Hamilton, Ontario

Branch Offices:

Chicago, Ill.
Portland, Ore.
San Francisco, Cal.



When Writing Advertisers Please Mention the American Carpenter and Builder.

What Do You Know About Varnish?

IF YOU were a watch-maker you wouldn't need to know much about it?

If you were a stone-mason you could pass the subject by as of little or no importance.

But you are a carpenter.

The material you work in, and much of that which your handicraft and skill produces must be finally finished with varnish.

Your work and varnish have a close, intimate relationship—so close that it is almost imperative that you know something about the value of good varnish and the art of applying it.

Start your education today by sending for a free copy of

"NATURAL WOODS AND HOW TO FINISH THEM".

BERRY BROTHERS, Limited, Detroit
Largest Varnish Makers in the World

Factories: Detroit, Mich., and Walkerville, Ont.
Branches: New York, Boston, Philadelphia, Baltimore, Chicago, Cincinnati, St. Louis, San Francisco.



OUR QUICK SERVICE MILL
100 x 200 3 Stories Employs 150 Men

A Free Trip to Cleveland

To convince you of our exceptional facilities and money saving proposition, we offer to all builders east of the Mississippi and north of the Ohio rivers, **free railroad fare both ways** if they will come to Cleveland, go through our mill, warehouses and shops and place an order for millwork amounting to \$100 net or more.

QUICK SERVICE IN MILL WORK WHEN YOU NEED IT

We offer to builders

- 1st Strictly high grade millwork, suitable for the best class of buildings.
- 2d The best equipment in America for quick service on special millwork.
- 3rd Wholesale prices.
- 4th Liberal terms. 5% for cash with order, 2% in 10 days, 30 days net on approved credit; or we ship C. O. D. with 20% paid in advance and allow 2% cash discount.
- 5th Large stocks of plate and window glass and paint supplies.

Shops for making art glass, mirrors, prism glass and beveled plate.

We are specialists in building material.

Four acres of floor space devoted entirely to the manufacture and sale of millwork, paint and glass.

Write for Catalog H or send list for estimate.



**The Cleveland Window
Glass & Door Co.**

213 Champlain Ave., Cleveland, O.

Doors Sash Frames Finish Porch and Stair
Stuff Plate Window and Art Glass
Mirrors Paints and Varnishes



son Company of Ambler, Pa., was organized and immediately erected a thoroughly modern plant for the manufacture of asbestos roofing slates, asbestos building lumber and corrugated sheathing.

Nearly all of the large institutions of the country, including the federal, state, county and municipal bodies, were satisfied, after making exhaustive comparative tests of the new material, that it was in all likelihood the logical successor to natural slate, and, more particularly, to the wooden shingle. It naturally followed that the "Century" shingle has a well recognized place among the roofing materials of the day. The quantity of cement used in this plant is some index of the great volume of business handled but when we glance at the Company's reports for the year ending December 31st, 1911, and find that during that year they manufactured and marketed over fifteen million square feet of material, the progress made is truly remarkable.

This "Century" material is a combination of selected asbestos fibre and Portland cement, the process consisting of a thorough mixing of the cement and asbestos fibre in the presence of a large volume of water, the resulting mass being gathered layer on layer to the required thickness and then subjected to a pressure approximating eight hundred tons per square foot. The resulting material is hard, tough, somewhat elastic, absolutely fireproof, waterproof and, in any

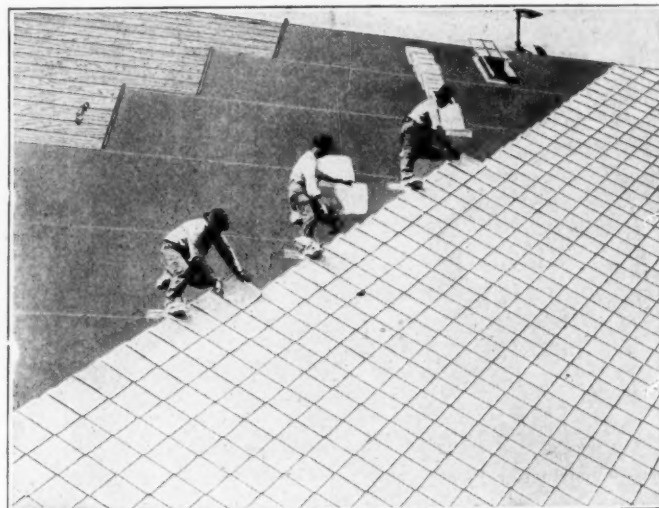


Illustration of Construction Showing the Application of
Asbestos "Century" Shingles

ordinary atmospheric or climatic condition, practically indestructible. It can be worked with ordinary carpenter's tools and as roofing may be employed upon any roof having a pitch of one-quarter or more.

For many years cement workers have been striving to find a process by which cement shingles could be manufactured in a form and thickness which would admit of their general use, the constant stumbling-block having been that, owing to the nature of cement, it was necessary to make the blocks so thick that they were extremely heavy and unwieldy. The conception of the inventor of asbestos "Century" shingles to use asbestos fibres as an interlacing support or binder about which the cement might naturally crystallize, solved the problem and asbestos "Century" shingles are now the accepted standard of cement roofings, this shingle being the thinnest, and comparatively the strongest, non-reinforced cement product manufactured.

The market for roofing materials such as these "Century" shingles is as wide as the universe, they being equally well adapted for the smaller country bungalow, the large country estate, the factory, barns, or any other type of building, the roof of which has been constructed so as to allow sufficient pitch for their safe application.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Those Signs Mean Business!

And they mean business for *you*, Mr. Carpenter, because they are being read by millions of people and are teaching those people that there is still plenty of

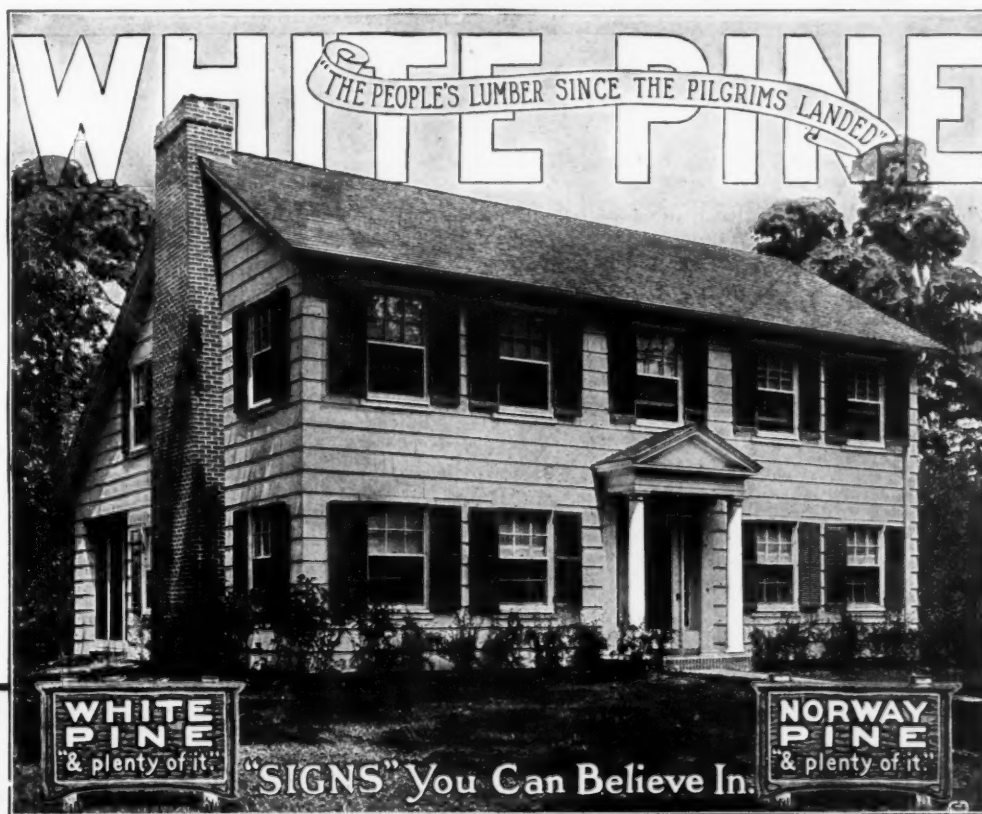
WHITE (AND NORWAY) PINE

of the same high quality that good carpenters have been using for 2½ centuries.

Those signs and the evidence that goes with them, are teaching the people the values of good lumber, and that means good business for good carpenters.



Our campaign direct to the *people* is helping to get more business and better business for *carpenters* all the time, and that is the kind of campaign that *the carpenters* of this country *enjoy helping along*—because it *pays* them. Don't YOU?



White Pine Home at Highland Park, Ill., Robert Seyfarth, Chicago, Architect

The house illustrated is built throughout of **White and Norway Pine**

White Pine was used for all exterior and interior trim including the shingle siding and the entrance construction.

Norway Pine was used for the rough lumber work in framing and structural timbers. And it is the only wood that approaches White Pine in value for window-blinds, screen-sash, storm-doors and similar uses.

According to the United States Government Report, Bulletin 99, White Pine has been

"The Leader in the Market for 250 Years"

It has held that enviable position because of its wonderful durability and beauty of grain and texture and because of its ability to take and hold paints and stains.

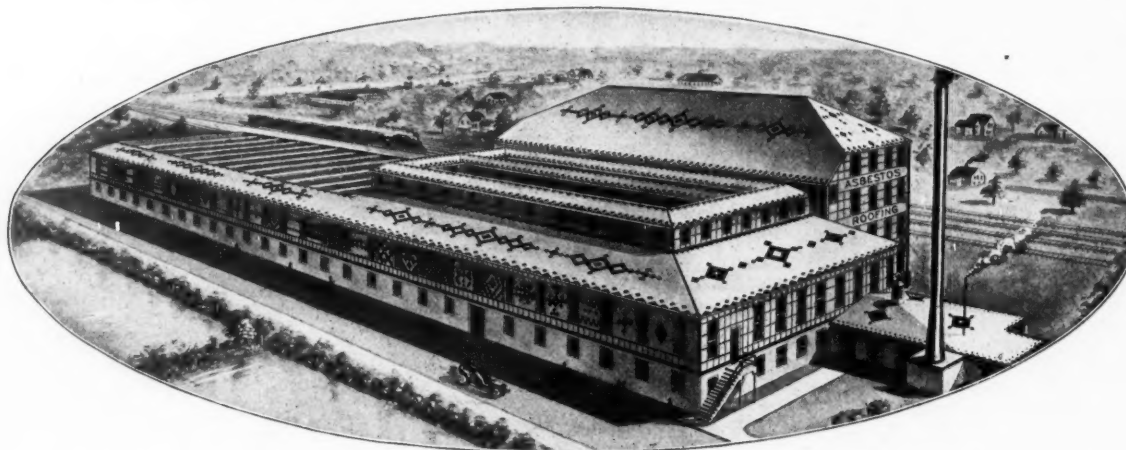
For Your Own Protection Get this Book

It will show you both by pictures and text *why* White and Norway Pine offer so much of real *value* to the home builder.

The book is free—ask for it.

NORTHERN PINE Manufacturers' Association
1119 Lumber Exchange Minneapolis, Minnesota

When Writing Advertisers Please Mention the American Carpenter and Builder.



The Great North Plant. The Only Plant of its Kind in America. Devoted to the Manufacture of Asbestos "Century" Shingles, Asbestos Building Lumber, Asbestos Flat Sheets and Reinforced Asbestos Corrugated Sheathing

Where it is desired to have an absolutely fireproof construction, the material is manufactured in corrugated form similar in all respects, as to the length, width and method of application, to corrugated iron or steel, having an advantage over the metal in that the asbestos corrugated sheathing requires no paint or dressing of any kind, does not disintegrate or corrode and may, like the metal, be applied direct to wood or iron purlins without the use of sheathing or other special fastening arrangement.—"Lehigh."



Zolium Roofing

The Flintkote Manufacturing Company of Boston, Mass., describe their Zolium Roofing as "a millionaire's roof at the price of shingles."

Zolium is a bonded sheet roofing in rolls containing suffi-

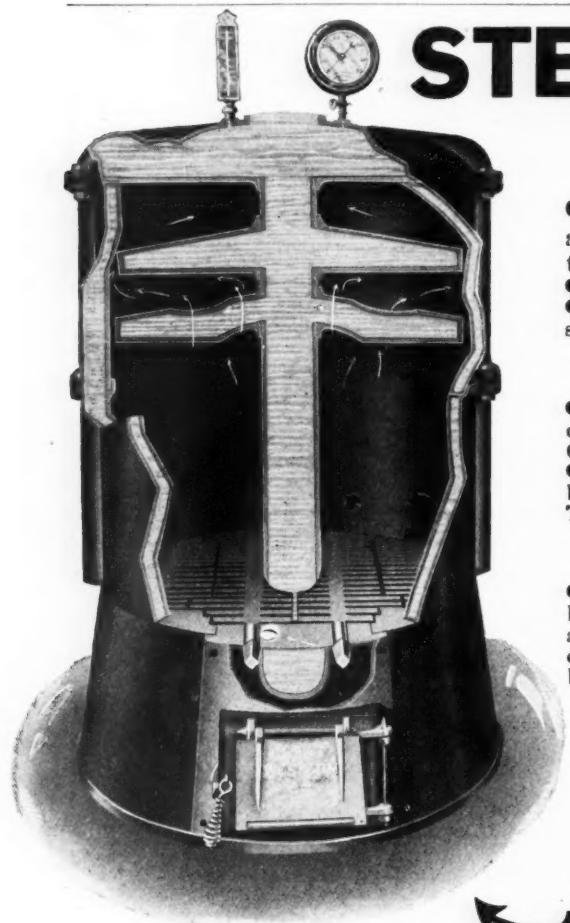
cient to cover 100 square feet of roof surface. It is laid in long notched strips which form a diamond effect without cracking.

Zolium is artistic in appearances and thoroughly serviceable in wear. It is strictly an architectural roofing.

Zolium is made in two shades of red and gray. Various artistic effects can be produced with it. Either of the shades of red will give a warm tile effect similar to the flat Spanish print tile. It improves with age. The outer surface gradually hardens until it becomes as hard as tile.

Zolium is light in weight, fire-resisting and quite easy to put on.

AMERICAN CARPENTER AND BUILDER readers can secure complete information concerning Zolium, also the other roofings of their manufacture, by addressing the Flintkote Manufacturing Company, Boston, Mass.



STERLING

HOT WATER HEATER

- ¶ Hot Water is recognized as the very best system for heating any home. True, it costs a mere trifle more to install but it saves that extra cost very quickly in economy of fuel consumption.
- ¶ Hot Water heat is steady, satisfying, clean—and it's healthful, too.
- ¶ The Sterling System is unbelievably simple and this simplicity is a source of great economy to the purchaser.

Not an Expense but Real Economy

- ¶ Durability and up-keep considered, The Sterling System is really cheaper than any hot air or stove heat. That means much to your clients, Contractors and Builders. It means a great deal to and for you, too.
- ¶ Heat economy and satisfaction are wanted in every home. You can be sure of true heat satisfaction in every building in which you install The Sterling System.

Easily Installed in New or Old Buildings

- ¶ Owing to its simple construction it can be readily installed in a building already built. It requires very little room indeed. Anyone, almost, who can handle tools can install the Sterling as we send complete heating plans absolutely Free. These plans are made by competent heating engineers.

Contractors and Builders

THE STERLING SYSTEM is just what you have been looking for. Our book—"The House of Perpetual Summer"—is something you ought to have. It will pay you dividends. Send for it today. Don't neglect to find out about THE STERLING SYSTEM before installing any particular heating equipment.

CONSUMERS' HEATING COMPANY
MARSHALLTOWN, IOWA

When Writing Advertisers Please Mention the American Carpenter and Builder.



Dominant Reason No. 2



Kno-Burn Has No Corrugations

or ribs. This makes the application of the plaster and the complete embedment of the lath easy and certain.

The residence shown above is one of two built some years ago near Cohasset, Mass. Both houses are close to the water and exposed to the salt air. KNO-BURN GALVANIZED LATH was used as a base for the stucco and both architect and builder report absolutely no deterioration to date.

This is one of the reason why

Kno-Burn

Expanded Metal Lath

dominates the field.

Other reasons will be given in subsequent advertisements—if you want them at once, write for Booklet 33, describing KNO-BURN METAL LATH in detail.

Fire-Proof—Non-sagging—never Disintegrates—Galvanized after expansion or coated with highest quality carbon paint—these are a few points of KNO-BURN superiority.

20th CENTURY LATH is a special acid-resisting metal lath of the same mesh as KNO-BURN. Send for 20th Century Lath Booklet 34. It tell you how to test different metal laths for acid-resisting qualities.

North Western Expanded Metal Co.

*Largest Exclusive Manufacturers of
Metal Lath in the World*

903 Old Colony Building

::

::

CHICAGO, ILL.

Mills at CHICAGO, ILL. and JEANNETTE, PA.



When Writing Advertisers Please Mention the American Carpenter and Builder.



This Truck Replaces Three Teams

In eleven months this 3-ton KisselKar covered in actual service 4,760 miles at a fuel cost of \$1.08 per day.

Manned by a driver and one helper, it replaced three teams of horses. The average daily burden was 37 17/20 tons.

It carried an average load of four tons—one ton overload—but in the entire period named was laid up only two and one half hours for repairs.

"We can recommend the KisselKar Truck and assure you that it lives up to its guarantee," writes Thomas E. Fleischer, manager of the Sheboygan Lime Works.

KISSELKAR TRUCKS

1500 lb. 1—2—3—4 and 5 Tons

Note these striking KisselKar Merits:—

Simple engine—easy to operate—reserve power—excess capacity—differential lock, preventing one drive wheel absorbing all the power on slippery places, and stalling the truck—four speed transmission geared up—fourth speed permitting high speed without racing engine: 15% to 20% lower fuel consumption than average trucks—light spring suspension for power plant—heavy spring suspension for load—gauge that weighs load—greatest accessibility—easy control—larger brake drums, and extra powerful brakes—special bodies designed to meet every need.

At the disposal of KisselKar owners is the unrivaled KisselKar Service, consisting of completely equipped service buildings at leading centers, where the mechanical end of motor trucks is taken off your hands.

Ask us to analyze your present horse haulage as compared to motor haulage. The result will be interesting.

Send for free book showing KisselKar Trucks in actual use in yours and any other lines of business.

Kissel Motor Car Co., 546 Kissel Ave., Hartford, Wis.
Branches: New York, St. Louis, Minneapolis,
Chicago, Milwaukee, Los Angeles, Dallas,
Boston, St. Paul, Kansas City.

**KisselKar Service Stations
and Agencies at over 200 leading
points throughout United States**

An Ideal Carpenter and Contractor's Shop

In the September issue of AMERICAN CARPENTER AND BUILDER a plan or layout for an ideal Carpenter and Contractor's shop was shown in the advertisement of J. A. Fay & Egan Co., of Cincinnati, Ohio. This plan was drawn up by their Engineering Department and represents the results of their experience in laying out shops of this kind throughout the country.

While the J. A. Fay & Egan Co., make a Universal Woodworker, they state that their many years of experience has



Fig. 1

proved that a small planing mill outfit will, in the end, prove the better investment for a progressive carpenter and contractor.

The cost of a complete outfit is surprisingly low, and instead of a limited range of work, the facilities of a complete planing mill are had, and expansion to take care of an increased business is an easy matter.

Of the seven principal machines shown in their plan, the No. 50 Band Scroll Saw, No. 2 Centennial Surfer, No. 270 Hollow Chisel Mortiser and No. 254 Hand Planer and Jointer were shown in their September announcement.

For the benefit of those of our readers who have become interested in power machinery through the articles and discussions on this subject in this paper we are showing here—

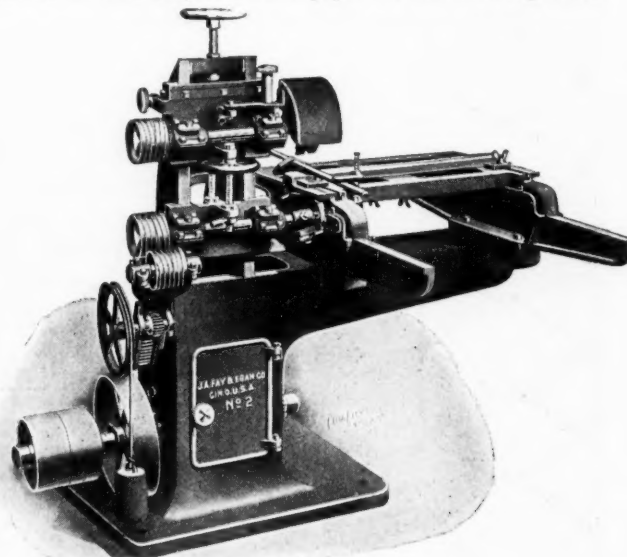


Fig. 2

with the other three J. A. Fay & Egan machines, viz. No. 1 Variety Saw, No. 2 Tenoner and No. 8 Friezer or Shaper.

Fig. 1 shows the Variety Saw. This machine is quickly

When Writing Advertisers Please Mention the American Carpenter and Builder.

**Boost Your Own Reputation, Mr. Contractor, By Telling Your Customers
---"Put a Stop to Depreciation---Build with Cypress at First"**



is the "LIFE-SAVER" of an HONEST CONTRACTOR'S REPUTATION

Here is a hot letter received from a builder who **knows** by experience.
Probably you feel the same way. Why not **CUT OUT TROUBLE?**

Contractor and Builder, _____ Street

PITTSBURGH, PA., Mar. 22.

Southern Cypress Manufacturers' Association,
New Orleans, La.

Gentlemen:—Please send me information about Cypress lumber.
Have about a dozen frame houses, from two to 16 years old, which I
never get through repairing. Window frames, sash, siding, sills, etc.,
become rotten in a few years, and the contractor gets a bad name (as
if it was his fault!) Yours respectfully,

This is a bona fide letter—"right off the bat." The facts are all too true.
HE WILL BE A CYPRESS MAN FOREVER. HOW ABOUT YOU?

We say it again—that by honest and intelligent advice on **woods** we are not only saving losses to people who are going to
build anyhow—but we are also **CAUSING MORE PEOPLE TO BUILD.**

This is going to be of
more and more benefit
to you month by month.
It is **up to you** to in-
telligently take advan-
tage of this by learning
for yourself that **CY-
PRESS** is not only the
ONE BEST OUT-DOOR
WOOD for the owner—
but also the **ONE BEST**
WOOD FOR YOU. Cy-
press "**makes good.**"
That helps your repu-
tation. Cypress is easy
to work—that's good
for your tools.

We are giving away
complete working plans
and specifications for
THIS SHINGLE
HOUSE. Many thou-
sands of people **ALL**
OVER THE U. S. are
writing for them.
THEY WILL HAVE TO
GET YOU TO DO THE
WORK.

THEY WILL INSIST
on CYPRESS.

It will be **MONEY IN**
YOUR POCKET TO
HELP THEM GET
JUST WHAT THEY
WANT.

CYPRESS is the
"corner" in YOUR ter-
ritory.

LISTEN FOR IT.

Why not FIND OUT what CYPRESS can do for YOU, NOW? WRITE US—ASK YOUR OWN QUESTIONS—about
your own needs, big or little You can rely on detailed and reliable **CYPRESS** information if you address our "**BUILDERS'**
HELPS DEPT." We will recommend **CYPRESS ONLY FOR USES WHERE IT IS THE BEST WOOD TO USE.**

Southern Cypress Manufacturers' Association
1216 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.

We are producing CYPRESS—and talking it—but not retailing it. **BUY IT NEAR HOME. ASK your lumber man if he**
sells CYPRESS; if he does not, ask him WHY. Then WRITE US. We will tell you where you CAN get CYPRESS.

When Writing Advertisers Please Mention the American Carpenter and Builder.



changed for ripping or cross cutting. The table angles up to 45 degrees for angle cut off work, and has an adjustable ripping fence and two mitre cut off fences. The throat plate is removable to permit use of grooving saws. A boring attachment for either straight or angle boring can also be

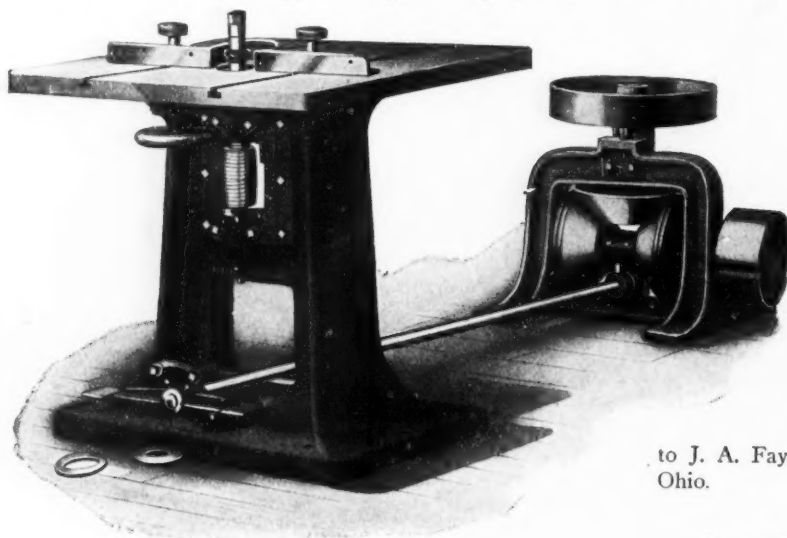


Fig. 3

applied. The variety of work which can be done on this tool almost classifies it as a woodworker.

Fig. 2 shows the No. 2 Single End Tenoner which machine can also be used as a cut off saw. It is made with or without coping attachments. In connection with the No. 270 Mortiser this machine will easily take care of all sash, door and blind work of this kind.

Fig. 3 shows No. 8 Single Spindle Friezer or Shaping Machine. All kinds of edge mouldings, raised panels, etc., are quickly made on this machine, and an attachment for making dovetailed drawers can also be furnished if desired.

All of these tools are simple in operation and any mechanic can learn to operate them to best advantage with a little practice. In their construction only the highest grade of workmanship and material is employed, insuring freedom from annoying breakdowns and constant repair charges.

They are all built on modern high duty principles, giving maximum results for minimum power consumption. A small gasoline engine for electric motor will be sufficient for the entire equipment.

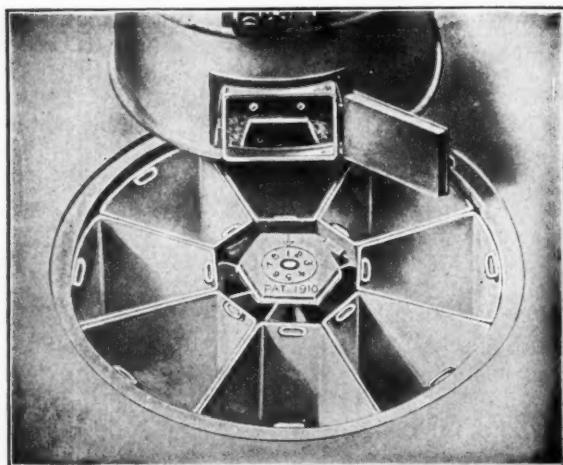
J. A. Fay & Egan Co. inform us that they will be glad to take this matter up with any interested parties and modify this plan to suit individual needs. Correspondence in reference to this matter should mention AMERICAN CARPENTER AND BUILDER and be addressed to J. A. Fay & Egan Co., 545-565 W. Front St., Cincinnati, Ohio.



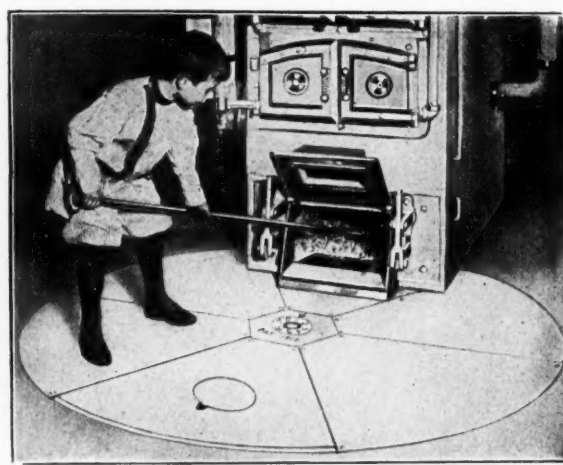
New Rough Edged Asbestos Shingles

The H. W. Johns-Manville Co. announce that after considerable experimenting they are prepared to offer a new form of J-M Transite Asbestos Shingles designed to fully meet the idea of architects as to a more artistic asbestos shingle.

These new Asbestos Shingles will be a full quarter inch thick—twice as thick as their other asbestos shingles; and



Ash pit of heater and receiver showing cover plates removed



So simple a child can operate it

Sharp Rotary Ash Receiver

Installed by D. L. & W. R. R. in stations, in office buildings by BELL TELEPHONE CO. and others, in homes of prominent people everywhere.

Most valuable acquisition to house construction in recent years. Idea easily grasped from illustrations. Value must appeal to every intelligent person. Eliminates ash and garbage nuisance, absolutely effective. Lessens fire risk. Safely disposes of ash dust, bad odors and germs from garbage. Cares for several months' accumulation. Easily installed before or after placing heater. No conditions prohibit installation. Satisfaction guaranteed.

Read the endorsement printed in this ad. From the many testimonials received, we have selected a bank endorsement for the reason that all buyers consider a bank endorsement sufficient.

Call your customer's attention to the Sharp Ash Receiver. Be the first in your vicinity to introduce this system. It will be a big ad. for you and show that you are acquainted with the most modern conveniences. Write for catalog and ask about our agency proposition.

W. M. SHARP CO., 500 Park Ave., Binghamton, N. Y.

Unqualified Endorsement by
CITY NATIONAL BANK
Binghamton, N. Y.

Binghamton, N. Y. July 25, 1912.
THE W. M. SHARP CO., Binghamton, N. Y.

Gentlemen:—We note your request for an expression of criticism of the Ash Receiver which you installed in our building, and it gives us pleasure to state that the apparatus has fulfilled every claim which you made for it.

The simplicity of installation, the practical and substantial nature of the construction, combined with the ease and completeness of its operation, prompt us to give our unqualified endorsement of the SHARP RECEIVER as a means to eliminate every undesirable feature connected with the disposal of ashes.

You have our permission to refer to us any interested prospects who may desire an expression of opinion direct from the user.

Very truly yours,

CITY NATIONAL BANK.
HM-MT HARTWELL MORSE, Cashier.

When Writing Advertisers Please Mention the American Carpenter and Builder.

ORR & LOCKETT

Established 1872

L HARDWARE CO

Most contractors and builders doing business in Chicago and vicinity know that they save time, trouble and money by sending us their orders for

Builders' Hardware

But there are others who do not realize what an advantage it is to have the benefit of our service, forty years of experience and tremendous buying power, and this advertisement is intended for them.

In the first place we carry at all times the largest and most complete line of builders' hardware in the country, so we seldom have to hold up an order because something is "out of stock." And this huge assortment (including the well known brands), gives you the greatest possible choice of kinds and prices.

We very seldom fill an order with the goods of any one manufacturer exclusively, but select those pieces which are acknowledged to be the leaders in each manufacturer's line. Thus the entire order contains only the highest grade articles—not a weak link anywhere.

In packing our goods for shipment we sort and label each piece from the specifications so that the workmen on the job lose no time in handling. Any contractor will appreciate the great advantage of receiving his hardware in this shape.

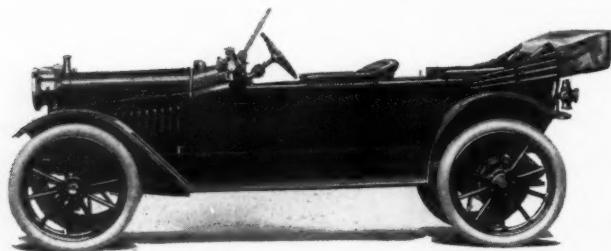
Send us your plans or specifications so we may show you.

ORR & LOCKETT

Established 1872

L HARDWARE CO

14-16 W. Randolph St. CHICAGO, ILL.



This Car Seeks First Honors in Its Class for 1913

Long-stroke motor,
3 1/4 x 5 1/2 inches
Enclosed valves
Three bearing crank-
shaft
Unit power plant
Multiple disc clutch
Three speeds forward
Sliding gears

Full floating axle
Center control
Zenith carburetor
Bosch magneto
106-inch wheelbase
32 x 3 1/2 inch tires
Quick detachable rims
Mohair Top, with
envelope
Jiffy curtains

Windshield
Rear shock absorber
Prest-o-lite tank
Gas headlights
Oil side and tail lamps
Tools—horn
Trimmings, black and
nickel
Standard color, black

Magneto and camshaft driven by silent Coventry chain

Hupmobile

\$975

Here is a car at \$975 built in accordance with the high code of honor which marks the manufacture of the best cars—cars far above it in price.

It claims close relationship with those cars—not in size, because it is a car of lesser dimensions, of course—but in all of the ingredients which constitute integrity of construction.

It asks to be set apart and judged, not by the standards its price

would suggest, but by that more microscopic analysis you would apply were a larger monetary investment involved.

We have pictured in book form some of the processes which justify our belief that this Hupmobile is the best car of its class in the world; and we want you to see and read it.

We also want you to see and ride in the car—samples are now in the hands of Hupmobile dealers.

HUPP MOTOR CAR COMPANY
1255 Milwaukee Ave., DETROIT, MICHIGAN

When Writing Advertisers Please Mention the American Carpenter and Builder.

instead of the edges being smooth and uniform they will be finished slightly irregular or rough.

This extra thickness and rough finish will not only enable the builders of high class residential and business structures to secure a more artistic roofing but one that is also more durable and fireproof.

Other advantages claimed for asbestos shingles are that they are weather-resisting; weigh less than slate or tile and consequently do not require such heavy roofing timbers; are not fragile; do not split, crack, or exfoliate when exposed continuously to extremes of weather; will not rot, corrode or decay, and do not require painting or any other up-keep expense.

The manufacturers offer these new shingles in such standard colors as Indian red, slate and natural gray, in sizes 9 by 18 inches for the American Method of laying, and 18 by 18 inches for French or diagonal laying.

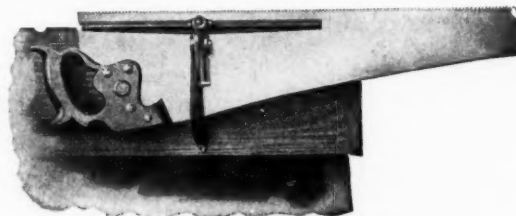
First course, "starters," hip and ridge roll sections have also been designed to match in both thickness and color.



A Folding Saw Clamp

The Keystone folding saw clamp which is manufactured by the Jos. Woodwell Company of Pittsburgh, Pa., weighs but 3 lbs. This clamp can be folded up like a jackknife and easily carried in the pocket. It occupies no more space in the tool box than the ordinary hammer.

The Keystone folding saw clamp can be fastened instantly



Keystone Saw Clamp in Use

to a work bench, edge of a board, pile of lumber or any other suitable place.

The jaws of this clamp are 14 inches long, requiring but one shift for filing a 28-inch saw. The jaws drop to position by their own weight, allowing free use of both hands for adjusting the saw. The eccentric lever automatically centers the jaws exactly opposite each other.

For complete details concerning this folding saw clamp address the Jos. Woodwell Company, 201 Wood street, Pittsburgh, Pa.



The Big Myers' Catalog at Hand

From those large manufacturers of door hangers, pulleys, pumps, and also various other lines, F. E. Myers & Bro., of Ashland, Ohio, comes their new No. 51 catalog.

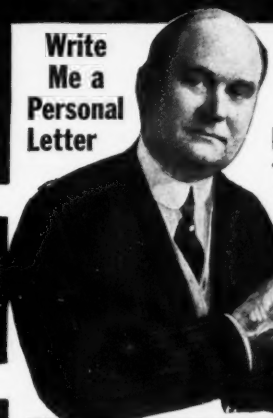
This No. 51 catalog is especially attractive in design and quality of workmanship it indicates, and it is thoroughly complete with a variety and style of goods offered. Its entire arrangement serves both the convenience of dealers and buyers.

As manufacturers, this company are remarkably situated for producing up-to-date implements. Their factory is complete and fully equipped with modern machinery, driven by electric power economically produced by natural gas. Their inventive ability is witnessed by the number and variety of patents they hold, and by the meeting of particular needs with specific devices or improvements, as an observation of their catalog will distinctly show. The pages of this catalog exhibit practically nothing but what they manufacture entirely.

For particulars concerning the Myers No. 51 catalog and details of their complete lines write them—F. E. Myers & Bro.—at Ashland, Ohio.

I Want Every Carpenter and Builder in the Country to Have These Two Big **FREE** Books

Write
Me a
Personal
Letter



I'll Mail Both
These Two
Big Books
To YOU
FREE

No shrewd Contractor or Builder can afford to be without our newest catalog of guaranteed Millwork and Building Material. It's the best thing of its kind ever published. Has 3,000 superb illustrations and 8,000 dollar-saving prices. Buy your material from us—we ship *direct* to you and there are no jobbers' or middlemen's profits to pay. We sell at *wholesale*, guarantee satisfaction and safe delivery. Here's your chance to get all the high-grade lumber, flooring, doors, windows, mouldings, porchwork, building paper, hardware, tinwork, roofing, paint, etc., at prices your local yards or mill can't touch. Get our fine, new Book of Modern Plans also. Shows floor plans, specifications, etc. *Fill in the coupon below—now!*

A Personal Word To Carpenters and Home Builders

I am a *practical* contractor and builder—and I *know* lumber and prices. You can really *save a lot of money* by dealing *direct* with me—and you can't get better building material anywhere in the United States.

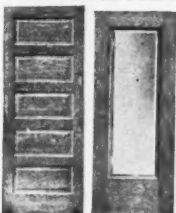
These bargains shown here are just a *few* of our 8,000 price-cutting offers. Get our big 176-page catalog (and the Plan Book, too) and pick out the goods you need. If everything isn't fresh, crisp and new, and *entirely* satisfactory, I'll refund every cent of your money. Write me today.

H. H. Mungler

President



Doors of All Kinds
at Wholesale Prices



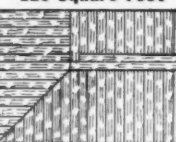
Panel Doors \$1.02 Up Glass Doors \$1.99 Up

\$24.50
Buys This \$40.00
Mantel

Equipped With Grate Complete

Don't buy a mantel until you examine the many beautiful designs in our free catalog. You will find just what you want at the price you want to pay.

Fancy Flooring
12c Square Foot



Clear Lattice

30c Per 100 Feet



Tin Shingles

For leaky roofs can't be beat—5x7. Per 100 7x10 inches—\$1.50 per 100

Storm Sash

2 light—6c up. 4 light—70c up. Ventilators 10c extra. Form double windows—save cost in coal bills alone—catalog shows all sizes and prices of both Storm Sash and Glazed Windows. Storm Doors, both glass and panel, \$1.44 up. Catalog shows all sizes.

Wearwell Paint

Perfect guaranteed house paint—single gallon cans only \$1.25. We have all kinds of paint at wholesale prices.



100 feet of Quarter Round, Dealer's Price \$1.00—our price only..... 25c

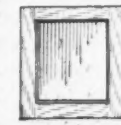


Spindles Porch

1c

PORCH POST

Clear Fir 4x4 8 Feet 50c



1 Lt. Sash 29c 4 Lt. Barn Sash 41c



HARDWARE
All kinds of building hardware you can't beat our goods or our wholesale prices.



\$773 We will furnish complete all lumber, shingles, millwork, sash, doors, hardware, spouting, paint—everything except masonry and labor to build 7-room house. Plans free. Design A113.

Estimates and Plans **FREE!**

Only **\$19.38**



YOU SAVE **\$45.62**

For These Stairs Complete—
Dealer's Price is \$65.00

Is such a big saving as this of any interest to YOU?

Economy Flint Surface Roofing

1 Ply, 35 Lbs. 90c

Guaranteed 5 Years

2 Ply, 45 Lbs. \$1.20

Guaranteed 7 Years

3 Ply, 55 Lbs. \$1.45

Guaranteed 10 Years

Rolls Contain 108 Sq. Ft.



\$971 We furnish complete all lumber, millwork, hardware, spouting, paint—everything except masonry and labor to build this 8-room house; plans free. A101

We Sell DIRECT—No Middlemen's Profits—At Even Less Than Wholesale Prices!

Carload shipments our specialty. All estimates, plans, etc., free. Safe delivery guaranteed. Fill in this coupon right now!

Gentlemen—Please send your FREE books listed below to—

Name.....

Address.....

**CATALOGUE—No. 43, of Building Material
PLAN BOOK—No. 53, House and Barn Plans**

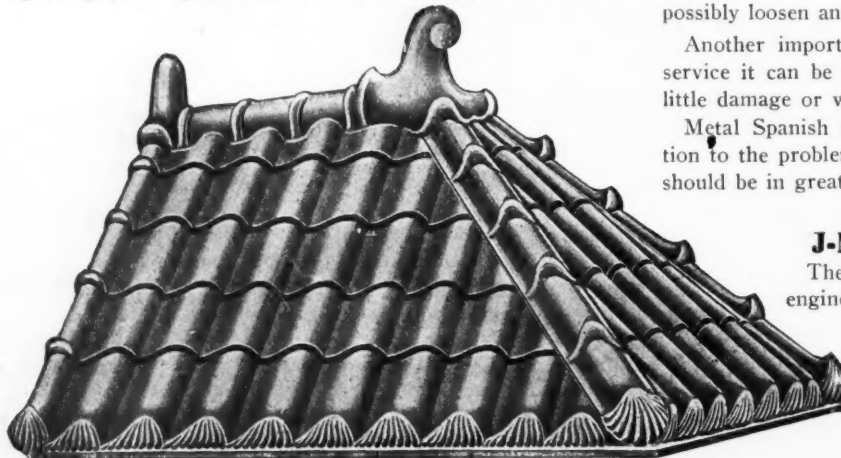
CHICAGO MILLWORK SUPPLY CO.
AMERICA'S GREATEST SASH AND DOOR HOUSE

1422 WEST 37th STREET, CHICAGO

When Writing Advertisers Please Mention the American Carpenter and Builder.

A Newly Perfected Weather Proof Metal Tile Roofing

It has long been the aim of metal tile roofing manufacturers to perfect a positively weather proof tile roofing combining architectural beauty, light weight, ease of application, fire and lightning proof qualities, and low maintenance cost, and it



Berger Mfg. Co.'s New Metal Spanish Tile

appears that with their new metal Spanish tile roofing the Berger Mfg. Co., of Canton, O., have met the long-felt want.

The weather proofing is accomplished by high water guard perfect fitting tight joints, the construction of which provides for the necessary expansion and contraction under all climatic conditions.

The heavily embossed S shapes permit of a free circulation of air underneath the metal tile roofing, keeping the under-

side of the tile roofing and the roof sheathing free from moisture. This air space also acts as a perfect non-conductor of heat and cold.

Metal Spanish tile roofing is adaptable for all forms of building and when once applied is claimed to be the most permanent form of roofing that can be obtained as it cannot possibly loosen and blow away.

Another important feature is the fact that after years of service it can be taken up and applied to another roof with little damage or waste.

Metal Spanish tile roofings appear to be the logical solution to the problem of high cost of roof repairs, and as such, should be in great demand.



J-M Waterproofing Department

The importance attached to that branch of engineering which deals with the waterproofing of building construction has become so great as to justify one of the largest manufacturers in this line—the H. W. Johns-Manville Co.—to establish and devote a special department to it.

It is expected that this new department will be of great assistance and value to architects, engineers and others directly or indirectly interested in the matter, but who do not possess that intimate knowledge of the subject necessary to secure the best results either for themselves or their clients.

Mr. H. W. Lawrence, generally recognized as one of the best and most expert waterproofing engineers in the country, will be in charge. He has had a long, practical experience and is thus able to intelligently consult with architects and engi-

Attention Mill Men!

We are making a specialty of built-up work for interior trim, panelled and flush wainscoting, veneered casings, base-boards, etc., in both plain and figured woods.

Can build up to 7' x 16'. Send in your specifications; we would like to quote you.



The F. Eggers Veneer Seating Co., TWO RIVERS, WISCONSIN

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Somebody may make a Better Wall Board some day---

Nobody has done it yet.

Utility Wall Board is a tough fibre board put together with two insulations of natural water proof asphalt, rolled under tremendous pressure into one solid compact sheet and surfaced on both sides with special moisture proofing.

It is the only Wall Board made under this scientific Moisture Proof Process.

UTILITY WALL BOARD

takes the place of both lath and plaster---It is very tough and durable---It is easily cut with an ordinary saw and is nailed direct to the studding.

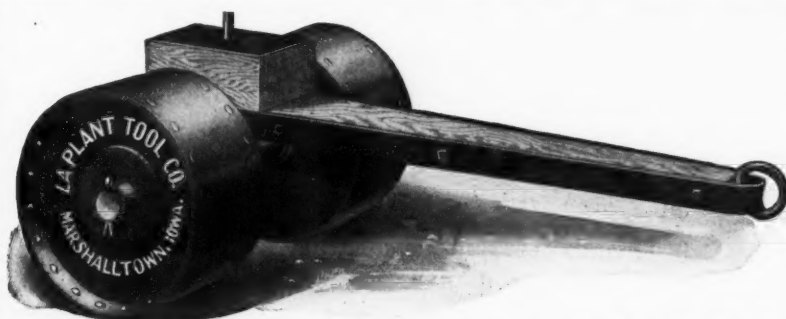
It will not warp, or crack, or shrink---and may be decorated in any style desired.

Any one who can use a hammer and saw can put it on and there is none of the muss and dirt of plastering---You don't even have to wait for it to dry.

It is used in building the new house---and in making over the old---Put it on right over old and cracked plaster if you wish---The cost is less than lath and plaster.

**We want to send a sample to every carpenter
and builder and home owner---Write for yours**

THE HEPPE'S COMPANY, - 4503 Fillmore Street, - CHICAGO, ILL.



THE LA PLANT HEAVY HOUSE MOVING TRUCKS

When you get a job with an old building on the lot---move it with the La Plant Trucks to another place---instead of wrecking it. There is more profit in it for you.

La Plant Heavy House Moving Trucks are made of steel---on scientific lines---are interchangeable so they can be worked singly, in pairs or in fours.

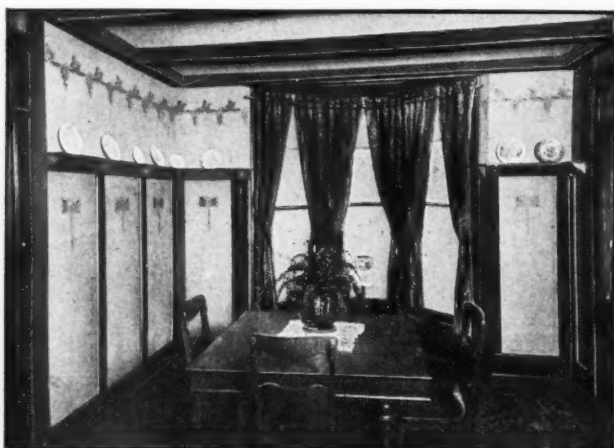
Write for catalogue O and see how easy it is to wheel a building a mile in a day---and how little the cost is for La Plant outfit compared with the profit to be made in moving houses instead of wrecking them.

LA PLANT TOOL CO.

1100 E. Nevada St.

Marshalltown, Iowa

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A Few of the Many Reasons Why You Should Recommend

Roberds Ideal Wall Board

It comes in convenient lengths and widths—easy to fit any space.

It is easy to handle—does not require an expert workman to apply it.

It is applied quickly—cuts with saw and nails to studs.

It can be applied at any time—weather has nothing to do with it.

It makes no dirt or muss.

It costs less in the first place.

It makes the house warmer in winter and cooler in summer.

It makes the handsomest room—decorated as desired, perfect for paneling.

It makes the most durable wall—never cracks, crumbles, warps or bulges.

It is more sanitary than any other material.

Find out all about Roberds Ideal Wall Board, then decide for yourself. Write for sample, booklet, prices, etc.

THE ROBERDS MFG. CO.
100 Railroad Street Marion, Indiana

neers as to the best method of applying waterproofing and mastic materials for all purposes.

Among these materials manufactured by the H. W. Johns-Manville Co., are the following: J-M Mastic; J-M Mastic Flux, hard; J-M Mastic Flux, soft; J-M Waterproofing Cement; J-M Liquid Waterproofing Cement; J-M Asbestos Waterproofing Felt; J-M Asphalt Saturated Felt; J-M Waterproof Fabric; J-M Concrete Primer; J-M Plaster Bond; J-M Cut-Stone Backing.

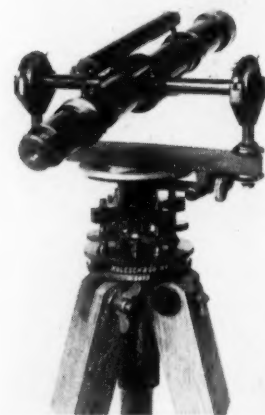
The H. W. Johns-Manville Co. maintain branch offices in all the principal cities of the United States and Canada, and are in position to promptly supply material anywhere for waterproofing residences, business structures, bridges, abutments, etc., as well as mastic for floors in breweries, abattoirs, factories, reservoirs, etc. The organization of the new department is such that contracts may be taken for the application of these materials and for the satisfactory completion of any waterproofing problem irrespective of its nature.



Builders Tilting Level

Kolesch & Co., manufacturers and importers of surveying instruments, drawing materials, and engineers' supplies, 138 Fulton Street, New York, have been requested for some time by the users of their architects' and dumpy levels to bring on the market a level that could also be used for transit work. The one illustrated is now offered, their Builders' Tilting Level No. 8073. This is for plumbing walls, and for throwing lines directly on the ground instead of having to suspend them with a plumb bob.

This instrument is constructed the same as any regular architects' level, except that the telescope is supplied with



Kolesch & Co's. Convertible Level No. 8073

an adjustable ring into which the trunnions can be screwed. When the telescope is taken out of the Y's and the trunnions screwed into their respective sockets, the telescope can be tilted and the instrument used as a transit.

They have also constructed an improved lock device for the Y's and are applying this on all of the Builders' Tilting Levels.

They have found this instrument practically indispensable for ascertaining lines and levels of buildings, laying out angles, plumbing walls, grading of streets, sewers, drains, and for road leveling. These levels are designed for the use of builders, architects, contractors, surveyors, gardeners, landscape architects, millwrights, real estate developers, and farmers. The instrument is constructed of the best material obtainable and by the best workmanship that money can hire.

They guarantee these instruments to be perfect in every respect.

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Granite

TRADE MARK

ROOFING



SIX INCH SOLID LAP

SAFEGUARD

Granite

A six-inch lap is better than a three-inch lap. It gives better protection against leaks and permits nailing down on the under sheet only, so that no nail heads appear on the surface. Otherwise this is the same Granite Roofing that we have sold for 26 years for use on great factories. It is immune from damage by coal smoke or cinders, and it has a sea grit surface which makes painting entirely needless. Behind it is a reputation that has Passed the Quarter Century Mark.

EASTERN GRANITE ROOFING CO.
19 Battery Place, New York

Chicago Pittsburgh

Antiseptine

Registered

Shingle Stains

"Wood preserving stains that stay put."

The New Standard in Exterior Stains

¶ Antiseptine Shingle Stains are made of the well known wood preserver Antiseptine in combinations with selected pigments.

¶ Antiseptine cannot evaporate from the wood like creosote and the Antiseptine insures lasting coloring effects by permanently protecting the pigments.

¶ Antiseptine Stains have been welcomed by all who are building reputations as well as building houses, as the first REAL step ahead in exterior stains.

¶ Antiseptine Stains at first cost, cost you NO more than the ordinary kind of stains—and they save you time, labor, money and worry in the long run.

We want to send you sample Antiseptine Stains on wood. You want to get these.

Made only by

American Wood Preserving Co.

1345-1351 North Branch Street

Incorporated 1892

CHICAGO

Phone, Dearborn 119

Antiseptine

Registered

Shingle Stains

"Insurance Engineering" says:

"This fire illustrates a clear count against the wood shingle roof,—and yet there are those who still argue in favor of wood shingles."

And wide-awake Contractors are recognizing that wood shingles are practically obsolete, and are dropping them for the up-to-date

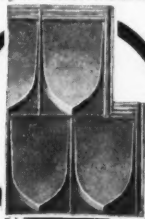
Wood Shingles Are Dangerous



Ruins of school, Muskegon Heights, Mich. Fire of January 29, 1912, is said to have been caused by a spark from the chimney igniting combustible roof.

CORTRIGHT METAL SHINGLES

Group of
Cortright Victoria Shingles



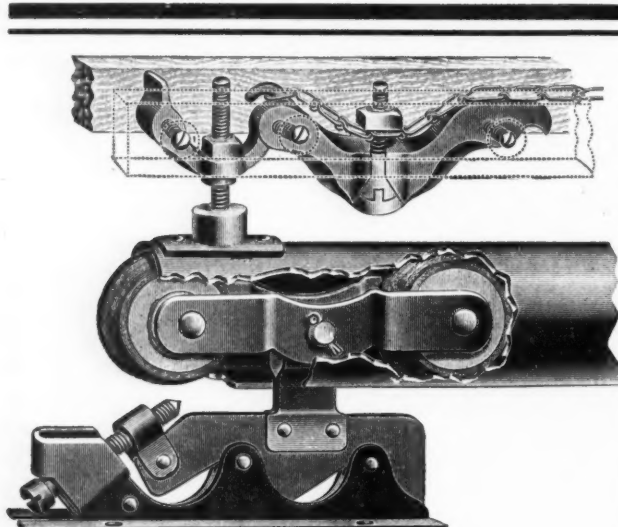
Which are Fireproof, Stormproof, Handsome, Inexpensive and Durable.

You can recommend CORTRIGHT METAL SHINGLES, and make as much or more money on them as on wood shingles, and yet feel you have done your client a real service, as they last as long as the building and never need repairs.

Send for our catalog and prices.

CORTRIGHT METAL ROOFING CO. PHILADELPHIA and CHICAGO

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Cannon Ball Sr. No. 404

The One Perfectly Adjustable Door Hanger

Two adjustments—one for the hanger—one for the track. Both *instantly* accessible with a screw driver. Either end of the track instantly raised or lowered as desired from the center of the door opening.

THE CANNON BALL House Door Hanger

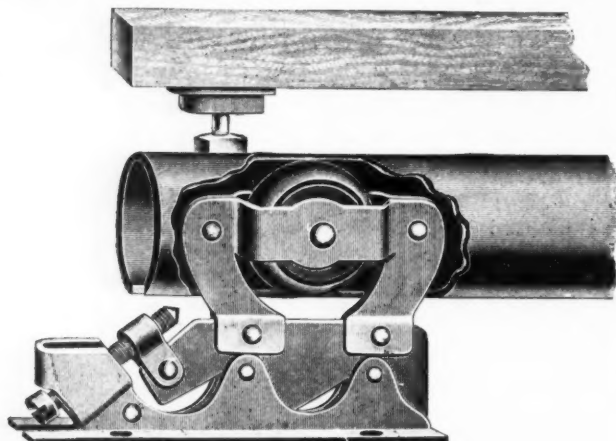
Frictionless, noiseless, practically indestructible. Wide tread, leather covered, specially formed roller-bearing wheels. Either single wheel or tandem. Hanger and plate for attaching to door are made of steel.

Track—14 gauge steel, $2\frac{1}{4}$ in. inside diameter, slotted $\frac{1}{4}$ in. on under side.

Furnished with two piece hardwood header.

Write for Special Circular and prices.

Hunt, Helm, Ferris & Co.
6597 Hunt St. Harvard, Illinois



Cannon Ball Jr. No. 468

Metal Lath Performs Well in Fire Test

In the *AMERICAN CARPENTER AND BUILDER* of last March we presented a set of specifications for stucco on metal lath as recommended by the leading metal lath manufacturers through their Association. This type of construction was tested recently in the city of Cleveland to determine conclusively its value for fire resisting walls and partitions. We learn from the Northwestern Expanded Metal Co., Old Colony Bldg., Chicago, that the behavior of metal lath under these severe fire tests was highly satisfactory.

The tests were conducted under the direction of V. D. Allen, Cleveland inspector of buildings, who appointed as a committee to act as officials at the test L. H. Miller, of the Bethlehem Steel Company, Cleveland; Professor John H. Nelson, of Case School of Applied Science, and W. S. Lougee, architect and former building inspector of Cleveland. The city building department was also represented by A. W. Zesiger, its concrete engineer. The materials tested were those ordinarily used in building construction. The tests were conducted as near as the equipment would permit, in accordance with the specifications for testing fireproof partitions adopted by the American Society for Testing Materials. The test attracted a great deal of interest, and among those in attendance as witnesses were a large number of representatives from city building inspectors' offices, also sheet metal manufacturers and fire insurance men.

The partitions were subjected to a two-hour continuous fire test. The specifications provided for an average temperature of 1700 degrees after the end of the first half hour. The maximum temperature attained exceeded this considerably, reaching over 1900 degrees. At the end of each heat a test stream of water was directed for $2\frac{1}{2}$ minutes against the partition through a $1\frac{1}{8}$ -in. nozzle held within 20 ft. of the partition.

Among the panels tested were the following:

Stucco Wall According to Typical Specifications of Associated Metal Lath Manufacturers

This partition had 2x4-in. Norway pine studding set 12 inches on centers. The studding was covered with No. 24 gauge expanded metal lath, with three coats of plaster prepared according to the metal lath manufacturers' specifications. This partition was $5\frac{15}{16}$ inches thick. It was fired 57 minutes before the break-down of the oil burning apparatus which necessitated postponing its completion until the following day.

At the conclusion of the partial test the outer coating on the fire side was largely gone and a section of the metal lath about 6 in. square was exposed. This exposed area did not increase after the fire was re-lighted. In about 45 minutes the plaster cracked a little on the fire side, and where the lath was exposed the studding could be seen burning. About ten minutes before the fire was finally turned off a hair crack appeared on the outside, but no fire could be seen through. When the panel was opened the studding was found to be burning in a few places, but the plaster remained almost over the entire surface. The water took the plaster off the lath about one-half of the surface on the fire side, and the lath was found to be hanging loose and bare. The outside remained intact except for a small crack. Ripping off the plaster on the fire side showed that the studding had been charred in some places, but 90 per cent of it was good. The inside plaster baked around the studding and prevented them from burning. The maximum temperature was 1920 degrees.

Four inch Hollow Metal Lath

In the construction of this panel $2\frac{1}{2}$ -in. metal studding was used, and No. 24 gauge expanded metal lath. The plastering

When Writing Advertisers Please Mention the American Carpenter and Builder.

House Cold—Last Winter?

You don't need to suffer again—take steps **now** to avoid the inconvenience, discomfort and actual **danger** in a cold, drafty house, unevenly heated, at best.

With Campbell's Guaranteed Heating System you get **steady**, even, moist radiation, **clean** and free from gas. And at any desired temperature.

And you get this good heating with **perfect ventilation**—or you are not a penny out of pocket.

CAMPBELL'S WINTER CHASER

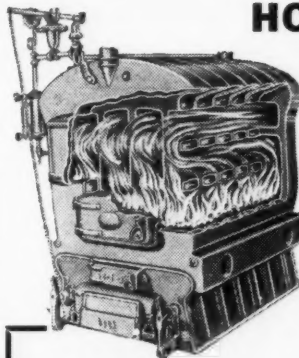
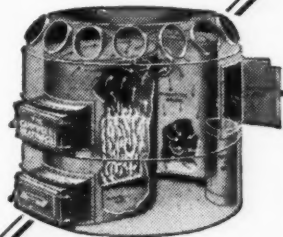
will do the work, and do it with economy and efficiency that will surprise you. No "hit-or-miss" methods. In the first place, the furnace, itself, is right—in the second place, every installation is backed up by the expert advice of the man who made it.

Campbell's Factory guarantee is behind every Winter-Chaser. You run no risk, and it can be installed in any residence within 24 hours. Order it **now**.

The large firepot and perfect combustion method **saves fuel**; the over-sized reservoir assures **moisture** in the atmosphere; the large air-chamber and entrance door in jacket avoid the accumulation of dust and germs. Get this even, economical, moist, **clean** heat by ordering a Winter Chaser **now**. Address

CAMPBELL HEATING COMPANY

Des Moines :: IOWA



HOW TO INSTALL Modern Heating Plant in Your Home

Save all cost of skilled labor. New method. My big, new book tells you how to install your own water system or modern heating plant. Under this practical Gibbons method you can do it yourself. Plans furnished free. Immense saving on all materials. Before you build, before you make improvements **send for my great book**. It is post-paid free to you.

Gibbons' New Method

My method for saving the cost of skilled labor is a revelation even to the most experienced contractors and builders. Get this free book and see for yourself. My astonishing low prices will prove to you my method is a **blessing to every builder** and home owner.

Modern Heating Plants

Steam or Hot Water. You can easily install one of my modern heating plants from the **complete simplified plans** and instructions furnished to you free. The saving is enormous. My **rock bottom price** is open to everybody on this great offer.

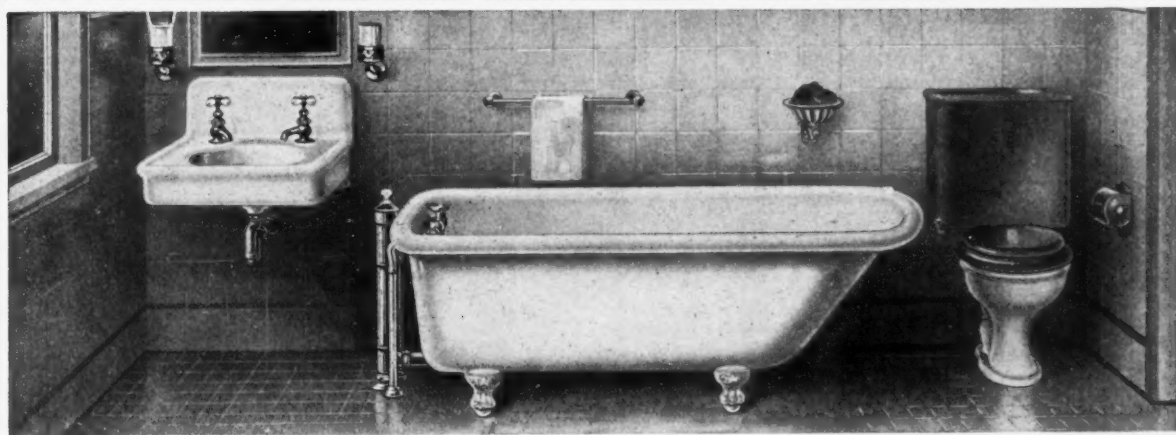
Save on all Material

Every home, even the smallest cottage can now have running water and a heating plant. My book explains how you can afford these comforts and luxuries. My prices and my practical saving will astound you.

BOOK FREE

My new book gives you greater buying power than your local dealer. Thousands of things illustrated and priced. **Gasoline engines**, hydraulic rams, pumps, pipes, valves, electric lighting plants, acetylene lighting plants, all accessories, everything guaranteed. You certainly ought to have this book. Send your name and get it, post-paid free. Send today.

M. J. Gibbons, Dept. 241 T, Dayton, O.



The rent agent calls attention to the Wolff Plumbing Fixtures as the best guarantee to the prospective tenant of the high grade of the plumbing system—indeed, the type of the whole building is many times inferred from the use of **WOLFF** material throughout.

The worries from "assembled" plumbing, contrasted with the perfect service of the all-built-by-one-house Wolff Plumbing, makes it easy for the architects to use Wolff specifications.

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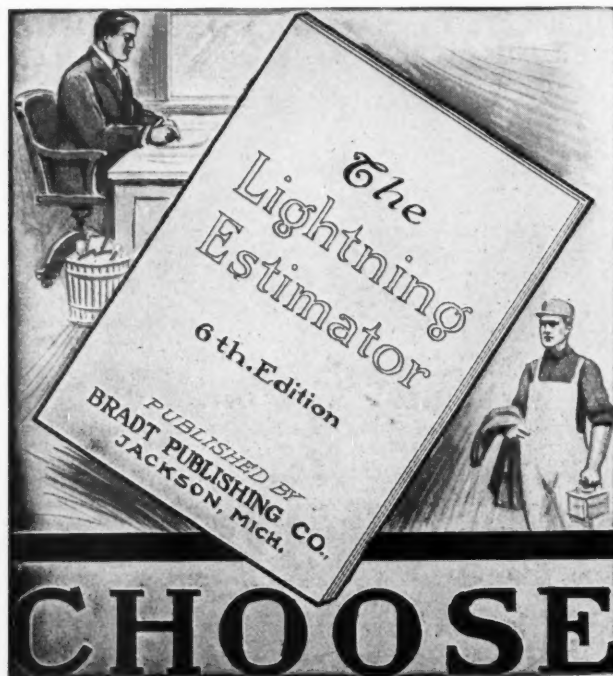
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Don't hesitate to grasp this opportunity to win success, for there's always room at the top for the man who knows how.

The LIGHTNING ESTIMATOR

stops worry, lying awake nights, over or under estimating and guessing—in fact, by showing you how to estimate the cost correctly, it spells the word **\$uccess** for you. Don't do yourself an injustice by passing up the greatest opportunity ever offered to Carpenter, Contractor or Builder.

The New Sixth Edition of the LIGHTNING ESTIMATOR

will teach you: How much time and material involved in each part of your work; how to figure on unfamiliar work; how to estimate quickly and correctly on a large job; how to estimate on time, material and prices in all parts of the country.

This Book is written by a man who has made good in this profession, and is based on hard, solid facts, secured by the knocks of experience, making it an invaluable guide to any one engaged in or those about to enter the building business.

If you are just starting out, here is your chance to get a firm foot hold. If you are an old timer and getting a little behind the times, here's your chance to brighten up and get some new ideas.

This Edition is bound in cloth, profusely illustrated—a feature not found in other books of this kind. The price, \$1.00. Don't delay. Send for it today.

BRADT PUBLISHING CO.

1260 Michigan Avenue

JACKSON, MICH.



Photo of 5 1/2" Partition—Cement Plaster on Metal Lath, 2x4 Pine Studs—After Two Hours Firing at 1912° Maximum Heat

was three coat work, the thickness of partition being 4 11/16 in. About a half hour after this panel was fired several cracks appeared on the outside. When the panel was swung open the inside was intact, but considerable plastering fell off the inside when the water was turned on, exposing some of the lath. The outside remained intact after the water was turned on. The maximum deflection of this panel was 4 15/100 in. The maximum temperature attained was 1970 degrees.

Two inch Solid Metal Lath

For the studding of this panel 3/4-in. channel irons were used, being set 12 inches on centers. The expanded metal lath was 24 gauge. Partition was lathed one side only. The plastering was three coat work and was also back plastered to make a solid 2-in. partition. The total thickness was 2 7/8-in. Fine cracks appeared on the fire side fifteen minutes after the firing. Shortly afterwards a large piece of plaster-

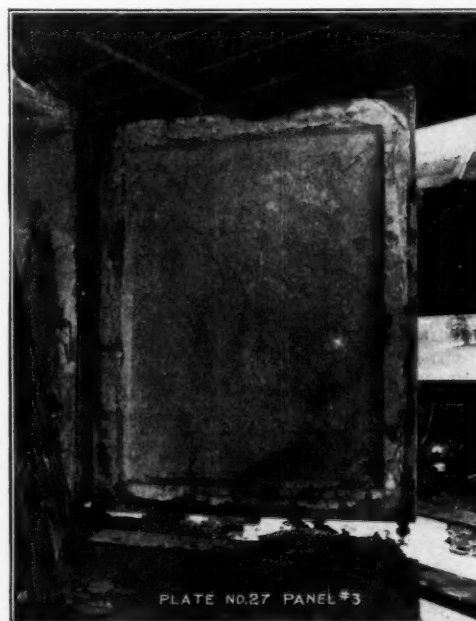
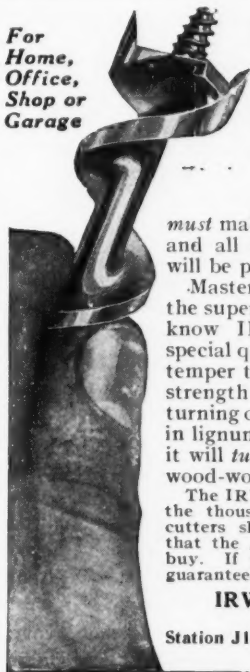


Photo of 2" Partition—Cement Plaster on Metal Lath, Steel Studs—After Two Hours Firing at 1929° Maximum Heat

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For
Home,
Office,
Shop or
Garage



Money Back If the IRWIN Auger Bit Fails to Please You

THE IRWIN Auger Bit is the guaranteed bit. It

must make good for you—under any and all conditions—or your money will be promptly refunded.

Master workmen everywhere know the superiority of the IRWIN. They know IRWIN Bits are made from special quality of tool steel, tested for temper taking qualities—for tensile strength—straining or stretching; turning or twisting for boring qualities in lignum-vitae—a wood so hard that it will turn the edge of the ordinary wood-working tool.

The IRWIN is lathe-turned by hand to the thousandth of an inch. Heads and cutters sharpened by hand-filing. Insist that the IRWIN brand is on the bit you buy. If your dealer hasn't the genuine, guaranteed IRWIN, write us.

IRWIN AUGER BIT CO.

Largest in the World

Station J18 — WILMINGTON, OHIO

The IRWIN Bit
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Metal Top.

"Royal" Ventilators

are the ventilators you should specify and use to secure positive ventilation.

Royal Ventilators provide an ever changing supply of fresh air without Cost of Operation. Correct principles and careful workmanship have won for us an enviable reputation.

Royal Ventilators are absolutely Storm Proof, and are the best and cheapest means for the proper ventilation of Buildings of all characters.

Each Royal Ventilator is sold with a guarantee covering efficiency, durability and workmanship that cannot be excelled.

Write for 80 page catalog, fully describing Royal ventilators.

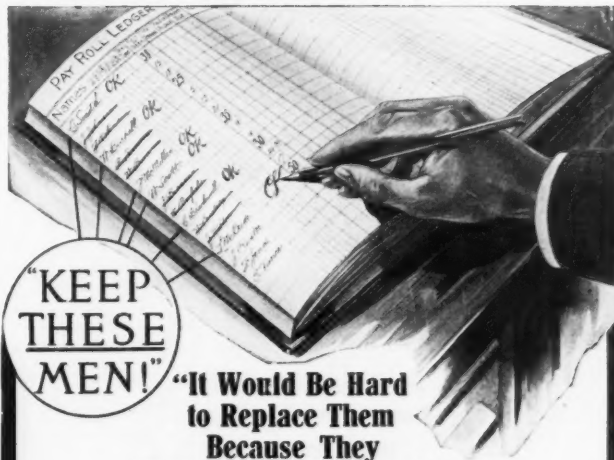


Glass Top.

ROYAL VENTILATOR COMPANY

417 Locust St.

PHILADELPHIA, PA.



**"KEEP
THESE
MEN!"**

**"It Would Be Hard
to Replace Them
Because They
Have Special Training"**

When the employer cuts down the pay roll it is the untrained men that go. Untrained men are easy to get at any time. But the employer keeps the trained men as long as possible, as he knows it will be difficult to replace them. His finger will sooner or later go down the pay-roll list on which your name appears. Are you one of the men whom he would like to hold? If you are not, I. C. S. training will keep you on the pay roll.

It makes no difference where you live, under what conditions you work, the I. C. S. will bring to you in your spare time, at small cost, the kind of training that the employer values—the training that will qualify you for a more congenial position—the training that means advancement and a larger salary.

Keep These Men

You can get this training. Simply mark an X in the coupon opposite the name of the Course in which you are interested, write your name and address, and send it to us. We will tell you how thousands of men who were situated just as you are have risen to positions of trust and responsibility through I. C. S. training. We have trained thousands and can train you. Make the employer say "Keep This Man" when he reaches your name. It will cost you only a two-cent stamp to find out how it can be done.

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Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position, trade, or profession before which I have marked X.

Architect	Estimating Clerk	Automobile Running
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ing was blown from the outside. This was probably due to moisture owing to the plastering not being thoroughly dry. The panel bulged out in the center, the maximum deflection reaching $3\frac{1}{2}$ inches. When the panel was opened the inside wall was almost perfect, there being only a few fine cracks. After the water was applied a small amount of plastering peeled off the inside. The maximum temperature reached in firing this panel was 1920 degrees.



A Sash Mouse will Save You Time

Ninety-nine out of every hundred carpenters are wasting time whenever they hang windows. They toggle up a rig for inserting the sash cord through the weight box and over the pulley. Sometimes an old piece of chalk line with a nail



Weight and Fastener of
"Han-Cot" Sash
Mouse

tied onto the end, does the business, somehow, for them. However it is done, time is lost tying and untying; and the time means money to the busy builders these days.

This waste is no longer necessary. The "Han-Cot" sash mouse illustrated here will help you thread your sash cords into the window frames in a jiffy. It is just what every carpenter has wanted. A "Han-Cot" sash mouse consists of three parts, fastener, chain and weight. It is 59 inches in length. Handley & Cotterman, No. 164 N. Wabash Ave., Chicago, will send you one very cheaply if you will write them.

Sash Balances

The Caldwell Sash Balances, made by the Caldwell Manufacturing Co., 15 Jones Street, Rochester, N. Y., have been so long on the market, that they have become a staple article of commercial hardware.

They are a counter weight for operating windows, and sustain sashes perfectly at any given point. While not intended to supplant them, they are used largely as a substitute for weights and cords.

They are used extensively in both old and new work. They are especially useful in equipping old windows, that have no boxes, for other fixtures, and they can be applied to windows without altering frames or sashes. When weights and cords can not be used in mullion windows, or other structures where there is no space for a box, the mullion, or overhead balance is made to operate perfectly.

The balances are used in railroad cars, for all kinds of water-craft, for show-cases, wall-cases and innumerable other purposes, in factories, stores and houses.

When ordering sash balances it is of the utmost importance that every sash be weighed accurately on reliable scales. It will not answer to estimate weights; the exact weight must be given, if the balances are to work perfectly.

Their balances are carefully tested for sashes of varying weights, from six to one hundred pounds. They should always be ordered by number, each number indicating the maximum lifting power of the balance. The Caldwell Balance is provided with adjusting screws to adapt them to variations of weights in the sashes of one to two pounds.

Printed directions for applying these balances are furnished with each set. When sashes are carefully weighed, and the Balances are applied strictly in accordance with printed instructions, the Caldwell Mfg. Co. guarantee them fully.

Be Progressive

Retain the old that is *good*—adopt the new which is *better*.

OUR ROOFING TIN is coated in the good old way—because no better way has ever been found.

OUR Copper Bearing Open Hearth Steel Base, is the result of modern scientific research.

This combination makes the BEST ROOFING OBTAINABLE. A test will readily determine its superiority. Give it a trial, and write for full information and quotations on our high grade Terne Plates, Black and Galvanized Sheets, Formed Products, Metal Lath, Etc. Send for our new Pocket Reference Book.

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For
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Send only 50c And We Ship You THIS SUPERB Rocker

Yes, only 50c and we ship you this magnificent rocker.

Only 50c down and then 50c per month—\$3.95 in all for this handsome piece of furniture. Positively the greatest bargain ever offered here or at any other place. Write for free catalog and bargain list today.

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We defy any house in America to equal our stupendous offers. You can see for yourself what an elegant rocker this is. It is made in American quarter-sawn oak finish—Has high back cleverly ruffled with rosettes. Handsomely upholstered in the best grade Boston Leather. Padded seat with ruffled and rosette edge. Profusely carved back and front posts. Order by No. A1291. This rocker is a big bargain—but there are thousands of others! Send today for our big bargain list.

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The great house of Straus and Schram, with a proud quarter century record, endorsed by the greatest bank, will trust you and allow you to buy any article on easiest monthly payments. If you want anything in rockers, chairs, bedsteads, carpets, rugs, curtains, washing machines, crockery, silverware, baby carriages, go-carts, Men's, Women's and Children's apparel, stoves, ranges or any other article of housefurnishing, don't fail to get our sensational easy terms.

Special BARGAIN LIST and CATALOGS

Don't wait a minute before sending for our great bargain catalog, the only catalog that shows Furniture, Carpets, Rugs and Draperies in actual colors. Extra bargains now in Stoves and Ranges.

FREE

Write Today—Don't Wait

Send a postal or letter—But send right now. Take advantage of these special offers while they last. This month only. So hurry. Just your name and address on postal or letter and we will mail free and postpaid our catalog and bargain list.

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GUARANTEED MIXED PAINT \$1.15 A GALLON

Direct from the
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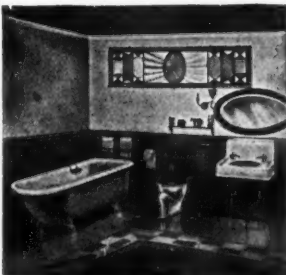
A Wonderful Paint Offer

If any of your buildings need painting, write at once for our free paint sample offer. We sell the best ready mixed paint in the world at lowest prices ever heard of—55c a gallon for the best Barn Paint, \$1.15 a gallon for the finest House Paint in quantities. We pay the freight charges.

Guaranteed for Ten Years

We furnish full directions how to do any job, and just now we are making a surprisingly liberal offer. Write at once and get this great paint offer, free shade samples, strong testimonials and valuable paint information. Just say "Send me your latest paint offer." Address: Crosby-Frank & Co., 298 Peoria Street, Chicago, Ill.

PLUMBERS' SUPPLIES AT WHOLESALE



When in the market for Plumbing Supplies and you wish to

SAVE 20 to 40 Per Cent

on every article, write for my free illustrated Catalog. The only house that sells first class guaranteed goods at wholesale prices direct. Shipments are promptly made from a very complete stock.

Small orders are as carefully handled as large ones.

B. B. KAROL, 768-772 W. Harrison St., Chicago, Ill.

This \$3 Silver Set Free

Full Set, Worth \$3.00

6 Teaspoons Butter Knife
6 Tablespoons Sugar Shell

This handsome 14-piece Silver Set is made by the Wm. Rogers Mfg. Co., of the highest grade, good heavy nickel silver metal, finely finished, and fully warranted not to wear off. The beautiful flower design is nicely embossed on all pieces.

Half Set, Worth \$1.50

6 Teaspoons Butter Knife Sugar Shell

This half set contains 8 pieces of the same fine design and high quality as the full set described above. Comes in fancy silverware box.

Here is this month's offer—a \$3 gift—which will never be offered again. The offer expires Nov. 1.

If you write before then for our Home Lovers' Bargain Book—Fall Issue—we will send you with it the order for this set.

It will call for the whole set, entirely free, with any order for \$20 or over. Or it calls for the half set—a \$1.50 set—with any \$10 order or over.

4,528 Home Things

3 Cents a Day

This mammoth book pictures 4,528 bargains in housefurnishings, picked up from 200 factories. Many of the pictures are in actual colors. It's the largest exhibit ever brought together.

Furniture Carpets and Rugs Chinaware
Stoves Draperies Baby Carriages
Sewing Machines Lamps—Guns Toys—Clocks
Silverware

A separate Stove Book pictures 456 Empire stoves and ranges, from 89c up; also a big new book showing Illinois watches and jewelry. Every price is from 30 to 50 per cent below store prices. We guarantee the lowest prices ever quoted on articles like these.

A Year to Pay

Goods are shipped on open charge account. No interest, no security, no red tape or publicity. You pay as convenient—a little each month—by saving a few cents daily.

Goods are sent on approval, to be kept a month before you decide to buy. So you cannot make mistakes.

Over a million homes now have charge accounts with us. Some have had them for 30 years. We shall gladly open one with you on the same convenient terms.

Write Us Today

You must write at once for our Bargain Book if you want this order for the Silver Set. Both are entirely free. But the offer ends forever on Nov. 1. If you want the Stove Book or Watch and Jewelry Book also, tell us. And write us today.

Spiegel, May, Stern Co.

1277 W. 35th St., Chicago

(288)

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You Can End Your Plaster Troubles With **GRAND RAPIDS PLASTERS**

Why continue to experiment with heavy, cracky lime mortar plasters when G. R. Plasters—Climax Wood Mortar and Hercules Wall Plaster—will give you permanent plastering satisfaction.

Use G. R. Plasters—Contractors and Builders—and you will do away with all repairing work. G. R. Plasters—Climax Wood Mortar and Hercules Wall Plaster—are hard wall plasters. They will not crack. They never need any refixing.

It will be money in your pocket to use G. R.—Climax Wood Mortar or Hercules Wall plaster—as in actual service they are far superior to any heavy, cracky lime mortar plasters made.

Climax Wood Mortar

Is extensively used. It is a wood fiber plaster made of pure gypsum rock. It is the best plaster made. The fiber adds about one-third to the bulk of the plaster, making it cover a greater area with less weight and maximum solidity and tensile strength. It is absolutely fire-proof. Its density prevents vermin. It is not affected by water. It is durable, flexible and pliable. Plastic and very easy to spread—any plasterer can apply it. It is adhesive and permanent. It does not contain one particle of sand.

Hercules Wall Plaster

Is a gypsum rock hair fiber plaster—we do not sand at the factory. It makes a wall that is dense, durable, hard, tough and economical. It is absolutely fire-proof. It dries quickly after applying. It spreads better and with less waste than any other wall plaster. We use only high grade hair in its manufacture and it contains no chemicals, acids or vegetable matter.

Let Us Send You Our Plaster Books—FREE

Our three plaster books—explaining hard wall plaster in general and Grand Rapids Plasters (Climax Wood Mortar, Hercules Wall Plaster, Superior Wood Fiber Plaster, Gypsum Wall Plaster, Sackett Plaster Board) in particular—will be sent to you FREE. These books should and will interest you.

With them we will also send you our room measurement booklet—from it you can tell at a glance the number of square yards in a room.

Write us now for your set of these books and the name of your nearest dealer handling G. R. Plasters.

Ask us any questions about G. R. Hard Wall Plasters you want to. We can show you just how to give better plastering jobs and make more money through using G. R. Hard Wall Plasters. Write us right now for particulars.

GRAND RAPIDS PLASTER COMPANY

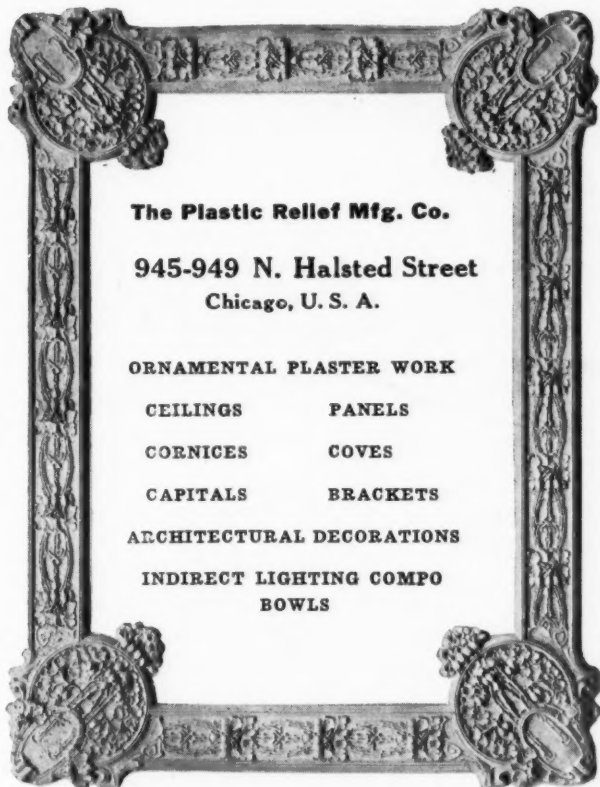
Grand Rapids, Mich.



"Remember the
TRADE MARK"

GRAND RAPIDS
PLASTER COMPANY
GRAND RAPIDS MICHIGAN

N. B. We solicit inquiries from Michigan, Ohio, Indiana, Illinois, Wisconsin, Kentucky, Tennessee, West Virginia, and Pittsburgh district Pa., only. Freight rates will not permit shipment to other territory.



The Plastic Relief Mfg. Co.

**945-949 N. Halsted Street
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ORNAMENTAL PLASTER WORK

CEILINGS	PANELS
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CAPITALS	BRACKETS

ARCHITECTURAL DECORATIONS

INDIRECT LIGHTING COMPO
BOWLS

Ceiling number 16

ROCK WALL BOARD

For

Walls, Ceilings, Partitions

"Rock" stands for firmness and durability. In using ROCK WALL BOARD you are getting a material of *quality* and *durability*. It has a splendid surface for decorating and can be finished in the most artistic manner. Possibly you have an attic or room you would like partitioned off; this is the best material for the purpose.

ROCK WALL BOARD is the modern material for remodeling or partitioning every room in any kind of a building. It is easily applied, sanitary and economical.

ROCK WALL BOARD is made in panels 32 and 48 inches wide by 6, 7, 8, 9 and 10 feet long.

Write us for further information, samples and "Rock Wall Board" booklet beautifully illustrated.

Rockford Paper Box Board Co.

Department W

Rockford, Ill.

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"Peerless" Fixtures for Storm Sash

At this season of the year, as preparations for winter are being made, carpenters are frequently called upon to equip new and old houses with storm sash. The value of double windows particularly on the northern and western sides of a house is more and more appreciated; not only is a home



Hung With Stanley Works "Peerless" Fixtures

more comfortable but there is considerable economy in fuel, which offsets the expense of the storm sash.

Possibly the most important matter for the carpenter to consider in hanging the storm sash, is the hardware. The hooks or hangers should be strong, neat in design and handsomely finished. They should permit the storm sash to be quickly put up or taken down.

The windows should also be equipped with braces or fasteners to hold the sash in place, and it is a great advantage to have adjustable fasteners which will hold the sash firmly when partly open, in order to permit proper ventilation, and also provide for window cleaning.

"Peerless" hangers and fasteners manufactured by the Stanley Works of New Britain, Conn., meet all of these requirements. They are made of the best quality of wrought steel, neatly finished in Japan. If preferred they can also be procured in the "Stanley" Sherardized finish, which is absolutely rust proof, and the ideal finish for hardware exposed to the weather.

When once hung on "Peerless" hangers, storm sash can be taken down or put up very quickly and easily without using either ladder or tools. In the spring full length screens can be hung on the same hooks.

The "Peerless" fasteners are strong but of a simple design and easily operated. They hold the sash securely either open or shut and prevent it from rattling or blowing off of the hooks.

"Peerless" hangers and fasteners can be purchased through all reliable hardware dealers. If more information is desired a card to the Stanley Works, New Britain, Conn., asking for Circular "A," will bring it by return mail.



How Niagara's Power is Used

The energy from Niagara Falls, including operation on both sides of the falls, is used at the rate of 126,000-h.p. for electro-chemical process, 56,200-h.p. for railway service, 36,400-h.p. for lighting and 54,500-h.p. for various industrial services, the total being 273,140-h.p. Since the water of Niagara Falls represents probably 5,000,000-h.p., it would seem that only about 5.5 per cent of the available power is being utilized at present.

"Dead Air" Will Save Thousands of Dollars for Your Clients on Their Coal Bills

As heat cannot pass through motionless or "dead" air, it follows that the more of this "dead" air which a pipe covering contains, the higher will be its insulating efficiency.

The only low-pressure covering which confines air in an absolutely "dead" condition, without circulation, and which contains more of these air spaces than any other covering of this type is

J-M ASBESTOCEL PIPE COVERING

For Hot Water and Low and Medium Pressure Steam

In ordinary low-pressure coverings the air-channels run from end to end of the pipe, permitting a free circulation of the air. In J-M Asbestocel Pipe Covering the air cells run around the pipe, thus making the air spaces very much smaller, creating more of them and preventing the air from getting into motion. This hollow arch construction also makes this covering far stronger than other kinds. It will last for years.

The saving on coal which your clients will effect by covering their pipes with J-M Asbestocel will more than pay its cost in a few months' time.

Write our nearest Branch for sample and Catalog No. 100.

H. W. JOHNS-MANVILLE CO.

Manufacturers of Asbestos
and Magnesia Products

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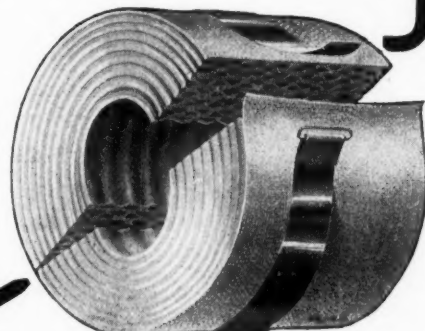
Asbestos Roofings, Packings,
Electrical Supplies, Etc.

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Architects

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Builders

The Farmers' Deposit National Bank Building Pittsburg, Pennsylvania

IS equipped throughout with Corbin hardware of a special design made from architects' drawings, with Unit locks on all corridor and communicating doors. This is one of the many notable homes of big business where the quality of Corbin hardware finds recognition.

P. & F. CORBIN

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The American Hardware Corporation
NEW BRITAIN, CONNECTICUT

P. & F. CORBIN of Chicago

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When Writing Advertisers Please Mention the American Carpenter and Builder.

Will You Read This Book If We Send It Free?



THIS book is the work of expert authorities. It gives instructions how to obtain best results; shows how much material is needed for certain work; lists shades best adapted for different woods; quotes prices on the best wood finishes. It is brimful of information that brings success to every reader. Be sure to get a copy. It is the result of 30 years' expensive experiments and tests. The reason why we give it free is because it tells about

Johnson's Wood Finishes

We want every contractor and builder to know all about our wood finishing materials and try them at our expense, so with the booklet we give you generous samples of Johnson's Wood Dye and Flat Wood Finish.

**Over \$200,000 Worth of Experience Is
Behind This Book—Ask For Your Copy**

We have been manufacturing Wood Finishes for over 25 years and know just what contractors and builders need. Our book and samples will bring you the information you want. Get them today.

S. C. Johnson & Son,

*"The Wood Finishing
Authorities"*

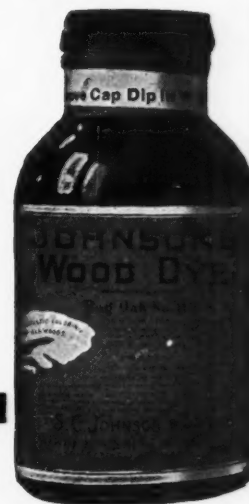
Racine, Wisconsin

When Writing Advertisers Please Mention the American Carpenter and Builder.

Generous Samples FREE

To Builders, Architects,
Contractors

LET us send you free samples of Johnson's Flat Wood Finish and Johnson's Wood Dye, also a copy of our Instruction Book. Architects, Contractors, Painters and Home Owners are enthusiastic over the results obtained and the big saving made possible with them.



Johnson's Wood Dye

is made in 15 popular shades as follows:

No. 126 Light Oak
No. 123 Dark Oak
No. 125 Mission Oak
No. 140 Early English
No. 110 Bog Oak

No. 128 Light Mahogany
No. 129 Dark Mahogany
No. 130 Weathered Oak
No. 131 Brown Weathered Oak
No. 132 Green Weathered Oak

No. 121 Moss Green
No. 122 Forest Green
No. 172 Flemish Oak
No. 178 Brown Flemish Oak
No. 120 Fumed Oak

Gallons \$3.00—Half-Gallons \$1.50

Test samples on any work you have in hand. Note how quickly Johnson's Wood Dye dries, so that dust and dirt have no chance to settle in the finish. Observe how it penetrates and brings out all the beauty of the grain without raising it in the slightest degree. In addition to this, the fastness of color, ease of application and practical economy will also appeal to you.

Johnson's Flat Wood Finish

is a liquid—an easy spreading preparation, manufactured especially for finishing interior woodwork of new residences and buildings—as well as furniture—and equally valuable for refinishing old surfaces.

This flat wood finish opens a new field for the contractor and builder. By the use of Johnson's Flat Wood Finish, you can make estimates on hand-rubbed effects that will land the contract every time—give your customer perfect satisfaction—and make you a good profit besides.

Don't fail to secure Instruction Book No. A. C. B. 10 and samples at once. If your dealer isn't supplied, write us and we will send them direct on receipt of postal or coupon.

S. C. Johnson & Son, Racine, Wis.

"The Wood Finishing Authorities"

S. C.
Johnson
& Son,
Racine, Wis.

Please send me
free samples of
Johnson's Flat Wood
Finish and Wood Dye
Shade No. Also
Instruction Book A.C.B.10

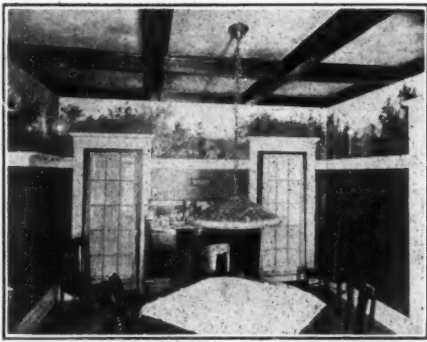
My Dealer's Name is.....

His Address.....

My Name.....

Address

When Writing Advertisers Please Mention the American Carpenter and Builder.



PLASTERGON is the Logical Answer

When Your Customer Says:

"I want to do away with all that old cracked plaster in my house. What will I use?"

Or He May Say:

"I want to have a den finished up in my house, how will I have it done in order to have it quickly and cheaply finished and yet in keeping with my home?"

Or a Merchant May Say:

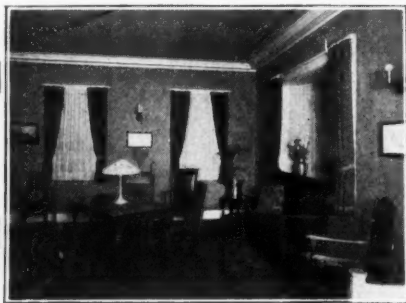
"I want a new window display. Something that will form an artistic background for my goods. Now it must be economical for I may want it changed soon again. Yet at the same time it must be in perfect harmony with the fittings and furnishings of my shop. What can you suggest?"

There you are, Mr. Carpenter! Dozens of chances right along for using Plastergon, the most successful substitute for lath and plaster on the market.

Use Plastergon and suggest its use to others. You'll see that it's to your advantage in a very short time.

Write and ask us for a sample and also ask us to explain how our free Service Department can be of benefit to YOU.

Plastergon Wall Board Co., Dept. A, Tonawanda, New York



How to Make Wall Paper Last Longer

Mr. H. A. Van Campen, Jr., of Dupree, S. D. writes: "I have sold lots of wall paper to be put on Compo-Board walls and it shows up very nicely and in fact the paper will last much longer on it than on plaster or anything else. I have seen lots of other boards, used but for me I would take the Compo-Board every time."

Compo-Board is the modern wall-lining. It is non-porous and airtight—hence cold proof, moisture proof, vermin proof, fire resisting—tough and durable—outlasts the house. It is simply nailed to the studding, and is ready for decorating as soon as it's on. Saves 15 to 30 days in completing a house. Can be painted, kalsomined or papered either with or without panels.

Contractors, builders and architects—If you want to deliver the most satisfactory jobs in the shortest time at the greatest profit to yourself—learn more about Compo-Board. Send your address on a postal for a sample and interesting booklet.

Northwestern Compo-Board Co.

5577 Lyndale Ave., No.

Minneapolis, Minn.

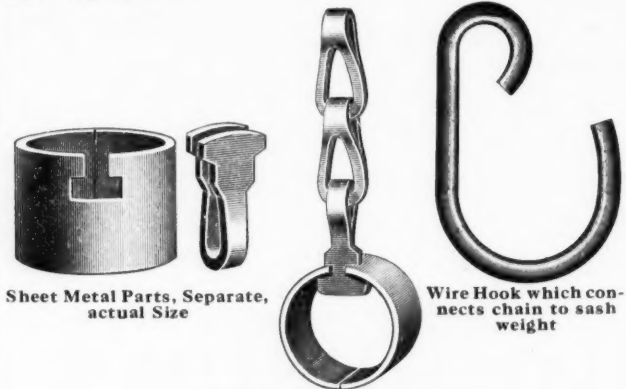


When Writing Advertisers Please Mention the American Carpenter and Builder.

Niagara Sash Fixtures

The Niagara "Symplis" steel sash fixtures for use with sash chain consists of three different parts (as shown), and a set consists of 12 pieces, four of each part. These fixtures are manufactured by the Niagara Falls Metal Stamping Works of Niagara Falls, N. Y.

They are easily put in place, for the circular part requires only a round hole in the sash. The special link is passed through the end of the sash chain, inserted in the slot and turned. When once in place and in operation, there is no possibility of its getting loose or out of order. The wire hook is the same as the company have used for years on their Niagara sash fixture. The whole device is simple and absolutely secure.



Sheet Metal Parts, Separate, actual Size

Wire Hook which connects chain to sash weight

Sheet Metal Parts which connect Chain to Sash, Shown with Chain Attached

Their "Premax" sash chain is made in three weights of link in bright steel, or in electroplate of copper, brass or nickel.

For circular matter and full particulars of these and the other hardware specialty features of their manufacture address the Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

Worcester Blount Improved Door Check

The illustration herewith shows the Worcester Blount Improved door check, made by the Worcester Manufacturing Co., 8 East Worcester St., Worcester, Mass. This door check is claimed to be the best that skill and experience can pro-



Showing the Blount Improved Door Check

duce, and the manufacturers guarantee it to be the most certain, the strongest and the most durable door controller on the market. The following points of superiority are brought out by the makers of the Worcester Improved Blount door check and spring.

1. Shaft is ground at packing insuring a perfect fit.
2. Shaft crank and connecting rod fastened by improved method and assembled before going into the check.
3. Ball valve is pinned in piston yet can be easily removed if desired. No screw here to work loose.



No. 212. A Design in Modern English

Ceilings in **Stamped Steel** for Public or Commercial buildings. Ceilings of modern refined designs for private residences. Tilings in **Steel**, for Bathrooms and Kitchens.

Half the labor of erecting a metal ceiling is strictly Carpenters' work, that is, the scaffolding and furring. Once started, they can finish it as well or better than anyone else. Secure our agency and push them.

Catalogue on request

Northrop, Coburn & Dodge Co.

No. 29 Cherry St.

-:-

NEW YORK



Residence of Dr. S. A. Dunham, Buffalo, N. Y. Roofed with Asbestos "Century" Shingles by J. S. Hausauer, Architect, and Jos. Spang, Contractor—both of Buffalo. Reproduced from an Artist's Drawing.

Asbestos "Century" Shingles

"The Roof that Outlives the Building"

Every time a roof breaks down, it is asked of architects, builders, roofers, "What roof do you recommend?"

You will find it worth while in all ways to get the facts about Asbestos "Century" Shingles and pass them along to your clients.

Made of cement reinforced with asbestos. Fire-proof, weather-proof, time-proof. Light-weight. *Permanent*—need no painting or repairs.

Numerous shapes and sizes. Four colors—Newport Gray (silver gray), Slate (blue black), Indian Red and Veneered Red (red face with gray back).

Write our nearest branch office for trade prices and terms, and Booklet "Everlasting, 1912."

Keasbey & Mattison Company, Factors

Ambler, Pennsylvania

Branch Offices in Principal Cities of the United States



This Beautiful Frieze

serves as an excellent example of our deep embossing. This is only made possible through our use of a Special Analysis Open Hearth Steel Sheet, very tough and pliable, which stands exceptionally deep embossing. The same metal is used in making

"BERGER'S"
Classik
METAL CEILINGS

Our large ceiling catalog will help you to make selections to harmonize with the architecture of the building. It contains hundreds of beautiful combinations, all taken from the eleven basic designs.

Ask our nearest branch for this catalog and any further particulars you may desire.

New York
Boston
St. Louis

The Berger Mfg. Co. Canton, Ohio

For prompt shipment address nearest branch.

Minneapolis
San Francisco
Philadelphia

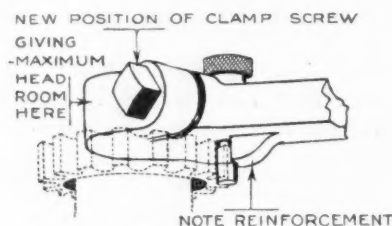
We also manufacture Ferro-Lithic and Multiplex Reinforcing Plates, Metal Lath, Roofing, Eaves Trough and Conductor Pipe, and Sheet Metal Building Products of all kinds.

When Writing Advertisers Please Mention the American Carpenter and Builder.

4. There is no long slot in main arm.
5. The ball stud used in end of main arm is steel and not a weak casting.
6. The ratchet is engaged by a round steel pin giving much greater strength.
7. U. S. standard threads used on all screws and nuts.

One of the big features of the Improved Blount is the new arm. The changes made are shown in the accompanying cut. These changes are a reinforcement to back up the ratchet-pin, and the new position of the clamp-screw, giving all the clearance required, and making a neater appearance.

The Worcester Manufacturing Co. recently won a decision in a suit brought against them by the Yale & Towne Mfg. Co. in the U. S. Court for the district of Massachusetts, asking that the Worcester Mfg. Co. be enjoined from making



Showing Improvements in Arm

Blount door checks that look like the Yale & Towne door checks, and from using the name "Blount" in any way in connection with door checks. The bill of complaint was dismissed by Judge Colt and on appeal, Judges Putnam, Aldrich and Brown confirmed the decree of the lower court.

Carpenters and builders interested in the subject of door checks should write the Worcester Mfg. Co., 8 E. Worcester St., Worcester, Mass., for further particulars and literature.

New Combination for Interior Decorating

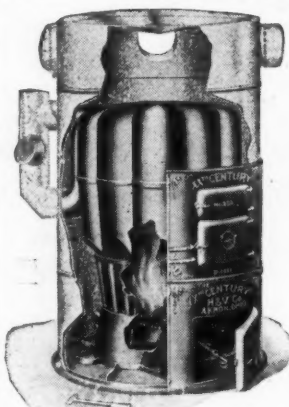
The Alabastine Company of Grand Rapids, Michigan, are promoting a combination of decorating materials which has won favor with the trade, the practical man and the owner. The use of Alabastine and Alabasco in combination for home decoration is undeniably a success.

Alabasco is a flat wall paint which can be washed with soap and water and sponge or cloth without any of the bad results that have been experienced with some other so-called "Washable" wall paints. It is being used in public buildings, clubs, stores, schools and hospitals with most satisfactory results that have been experienced with some other so-called

Alabastine has long been recognized as a superior wall coating remarkable for its soft-hued tints. It is inexpensive, gives the user less trouble than kalsomines and the most satisfactory job all-round. The use of a washable wall paint is most desirable for certain walls but to use it throughout the ordinary home is an unnecessary expense.

Mr. Hamilton, General Manager of the Alabastine Company, after long experimenting and a thorough trying-out, introduced this combination for the home: Alabastine for ceiling and side walls with the more expensive material—Alabasco—used only in such places as are exposed to extra wear, finger marks, etc. For example, along the stairways, lower part of halls and bathrooms, below the plate rail in the dining room and for nurseries; also for kitchen and cupboard walls which require frequent sponging off.

This method enables the home-owner to keep the walls in a uniform condition and frees the decorator from the criticism that his work was not well done because it did not stand any wear, when in reality the carelessness of the people in the home caused the dissatisfaction. Every decorator will appreciate this way out of the difficulty of keeping customers satisfied and at a very slight additional expense over the old methods.



Warm Air Heaters

XXth Century Hard or Soft Coal

Steam and Hot Water Boilers

The remarkable design (our exclusive patent) of our Fire Pot in both Heaters and Boilers, guarantees absolute combustion, ease of operation, and the lowest possible fuel-cost. Examine one and see why.

Every Pound of Fuel is Made to Produce the Maximum Amount of Heat Units—No Heat Units Wasted

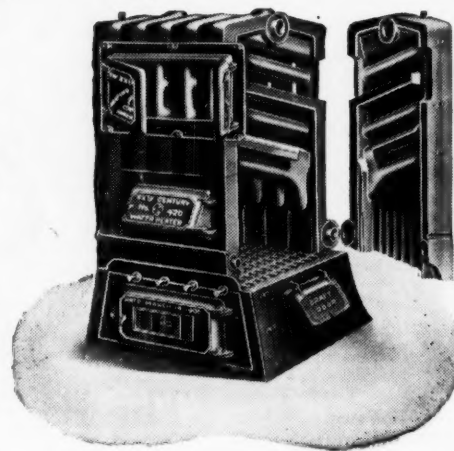
Builders: should ask for our catalogue and prices—the most sensible features ever embodied in heaters and boilers that have stood the test for years. Write us.

Every Builder Knows—

That, after all, no house is ever satisfactory unless it can be the most evenly, cleanly, perfectly and economically heated that is possible. Whether the heating be of Steam, Hot Water or Warm Air, it matters not. The very building of that house demands the best possible consistent with cost of installation, maintenance and operation.

You Can Burn Cheap Grades of Soft Coal or Screenings

as perfectly, cleanly, and easily, and at a much lower cost and with perfect satisfaction with



The XXth Century Heating and Ventilating Co.

Akron, Ohio

When Writing Advertisers Please Mention the American Carpenter and Builder.

Specify a Kalamazoo Furnace For Your Next Job

Make Good Profits and Good Friends

There's big money for you in recommending Kalamazoo Furnaces and installing them yourself. You can charge for the work, making a nice additional profit on each job. Kalamazoo Furnaces are easy to install—the most inexperienced have no trouble following the blue prints which we furnish.

SHIPPED DIRECT—30 Days Free trial

FREIGHT PREPAID—360 Day Approval Test

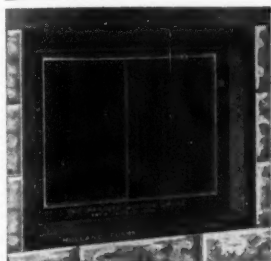
Buyers save \$25 to \$100 on each furnace because we ship direct, saving them the dealer's profit. Owners are always pleased—Kalamazoo Furnaces give *greatest heat from the least fuel*, are easy to operate and are long lived.

Write us *at once* for catalogue No. 689. Let us submit you a plan and price for a Kalamazoo in your next job.

KALAMAZOO STOVE COMPANY, Kalamazoo, Mich.

Over 200,000 stoves have been sold by the Kalamazoo Stove Co.

A Kalamazoo And Gas Stoves Too
Direct to You



CLOSED—A REAL WINDOW

Chute is a real window, combination hopper coal chute. Closed—it is an ornamental, attractive basement window. Opened—it is a practical chute. A heavy steel sheet covers and protects the glass when chute is in use. The Window-Chute is made in two sizes—18 and 24 inches wide by 22 3/4 inches deep.

You want to investigate the Window-Chute. Why not let us mail you our circulars describing it? Drop a line that you are interested and we will forward full particulars.

HOLLAND FURNACE COMPANY

Holland, Mich.

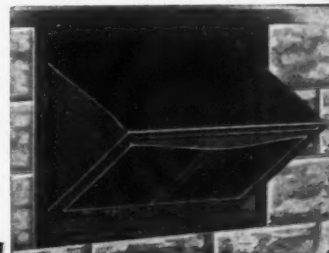
RECOMMEND and INSTALL the WINDOW-CHUTE

Our Window-Chute is the one practical combination window and coal chute manufactured. It is the only chute YOU can afford to recommend or install in your buildings. It is NOT an experiment.

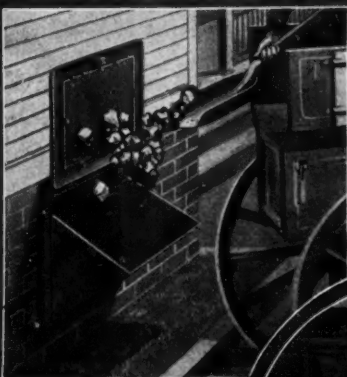
Window-Chutes are in extensive use. They always satisfy both the owner and builder. They are being generally specified—but whether specified or not—it is policy for you to install the Window-Chute rather than a "just as good chute." They help your reputation as a good, reliable builder.

The Window-Chute is burglar proof. It can be opened only from the inside. It is easy to set. It is rust-proof. It will not buckle under wall. The Window-Chute is made in two sizes—18 and 24 inches wide by 22 3/4 inches deep.

OPEN—A PERFECT CHUTE



MAJESTIC FOUNDATION COAL CHUTE



Protects the building just where most needed—above the opening.

The heavy steel hopper catches all the coal.

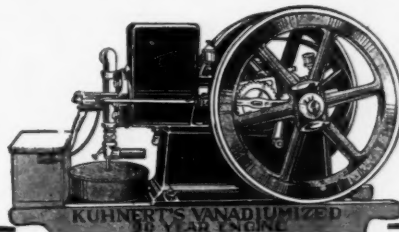
When not in use, the hopper lies in the bottom of the chute body. The door locks automatically either open or closed. Strictly burglar-proof. With 1/2-inch wire glass or steel panel in door.

Write for circular and address of nearest dealer.

MAJESTIC FURNACE CO.

995 to 1001 Sixth Avenue

Huntington, Indiana



Use the Vanadiumized 20 Year Engine FREE

The only engine with the marvelous strength of vanadium in it. Use it for 10 whole days free. Use it free to prove that the new vanadiumized engine is the wonderful engine you have been wanting—practically lasts forever. Easiest to handle. Use less gasoline. Write for description of this marvelous 20-year engine.

20 Years Guarantee The only vanadiumized engine on the market today. The only engine that can stand up under our unequalled, sensational guarantee of 20 full working years. Full 20 years guarantee on all sizes of engines. Write for particulars of this great sensational guarantee. You never heard of anything like it before. Write for particulars today.

Easy Payments

Never mind the money. Our payment terms are so very easy that you never think of the money. Marvelous quadruple duration Kuhnert 20 year engine is paying for itself and giving you big dividends before you ever begin to pay us a single cent.

No Money Down. Not a single cent. When you get our catalog describing the quadruple duration 20 year engine you will be astonished to see that we do not ask you to send us a single cent when you are sending for this engine to try it free. By all means see our sensational selling offer. This is a limited offer. Write for particulars now.

Special. To all who write promptly we will include our special offer of free equipment. You certainly want to know all about this sensational improvement in gasoline engines. Just send your name and address and full particulars of this special limited offer will be sent to you post-paid, free.

L. C. KUHNERT, Jr. COMPANY, Dept. 2412 Chicago

When Writing Advertisers Please Mention the American Carpenter and Builder.

Contractors and Builders!



If you are busy?

This will interest you.

You know what it means to have contract jobs finished on TIME.

You also know what it means when you cannot.

At the same time orders continue to come in and you are unable to take care of them.

Your client wants a GARAGE, a Summer Cottage, a Storage House or a Small Building for one of the many different purposes.

You want to accommodate him, in return for his past favors and in anticipation of future business.

WHY NOT INVESTIGATE THE PRUDENTIAL PORTABLE FIREPROOF BUILDINGS?

They are constructed of No. 24 Galvanized Steel—the materials and workmanship, A-1.

They are shipped complete in every detail, knocked-down and crated, ready for erection on the site.

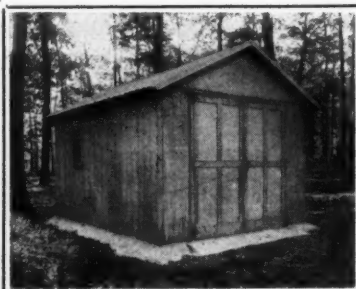
You send us the order, we allow you Dealer's Commission.

You charge additional fee for erection.

An easy and quick way for turning cash.

Write today for catalog and full particulars for the sale of the

PRUDENTIAL PORTABLE FIREPROOF BUILDINGS
(Patented)

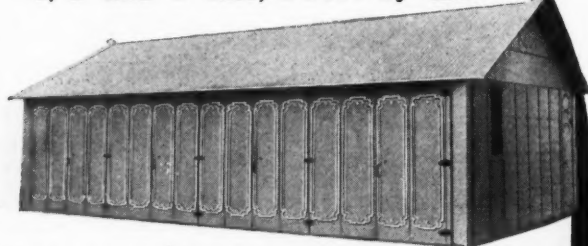


The C. D. PRUDEN COMPANY, Sole Manufacturer,

Station C. BALTIMORE, MD., U. S. A.

All Kinds of Buildings

—from a Small Shelter for Motorcycles → to garages which accommodate 4, 5 and 6 cars, built by the



PRUDEN SYSTEM PORTABLE FIREPROOF

construction. We can ship you immediately buildings of almost any size and for almost every purpose. All buildings made of interchangeable units of heavily galvanized steel. Units interlock and support each other. No framing. Strong, handsome and durable as masonry.

QUICK EASY PROFITS

"Pruden System" Buildings are erected in a few hours. Come entirely complete. No way else you can make such a good profit in so short a time. Plenty of time to put these buildings up before cold weather. Orders immediately shipped from stock.

Write for catalog and special terms to Contractors

METAL SHELTER COMPANY
9-90 W. Water St., ST. PAUL, MINN.
Patentees & Sole Mfrs. of Pruden System Buildings

Artificial Marble and Sanitary Flooring

Our New York representative has been devoting considerable time to investigation of the artificial marble and sanitary flooring industry which has become so closely allied with the manufacture of cement products throughout the country. Indeed, a large percentage of contractors, as well as manufacturers of concrete blocks, cement brick, burial vaults, etc., realize that a thorough knowledge of this industry is quite necessary to the advancement of their business; that it will broaden their field of operations, and thus afford increased profits.

The ever-increasing demand for sanitary materials which are inexpensive yet highly decorative, can be readily understood by all who are associated with the building trades; the rapid development of artificial marble has been the subject of favorable comment at Cement Shows for several years.

These products are known under a variety of names, some being trade-marks; and the utmost secrecy concerning the composition and other essential details has been maintained by successful manufacturers; in some cases exorbitant prices have been charged for secret formulas. This condition has naturally retarded the growth of the industry, although it is well known that the necessary materials for the work are easily obtained in the open market.

The Artificial Marble Supply & Equipment Co., 374 Market St., Newark, N. J., have recently acquired the exclusive selling agency for a very complete and comprehensive book, entitled "A Treatise on Artificial Marble and Sanitary Flooring." The book contains approved formulas for all purposes, detailed instructions, and information necessary to every successful producer; in fact it lays bare the real secrets which in the past have been carefully guarded.

Our representative, upon visiting the Newark plant of the Company, was indeed surprised at the mammoth display of products imitating richly veined marble, but even more amazed at the extreme simplicity of the process and the ease of obtaining such elaborate color effects. To the layman, it is surprising that such highly glossed surfaces are obtained from ordinary molds, without the necessity of polishing the products; yet it is largely due to this peculiarity of the composition that the cost is so low. It is claimed that slabs one-half inch thick are produced for eight cents per square foot, while the thickness used for enamel on concrete products seldom exceeds one-fourth inch.

We have learned that no machinery is required in the production of artificial marble; hence the cost of equipping a shop is very slight, and the possibilities in this line of work are almost unlimited. Jointless sanitary flooring is coming into wide use, and can be employed with equal success as a wearing surface for either wood or concrete floors. Write for the treatise above referred to. It costs but little.

The Artificial Marble Supply & Equipment Co. can supply any or all necessary material in any quantity for this kind of work; also any molds and utensils required. The company further makes a specialty of complete installation of plants and personal instruction in the manufacture of products.



A Novel Advertising Series

Commencing with the September issue of the AMERICAN CARPENTER AND BUILDER the C. E. Jennings Company, 42 Murray Street, New York City, inaugurated a decidedly original advertising campaign which embodies in the main a series of pen and ink drawings featuring a "Dan" and a "Shorty" in some novel "stunt" with a Jennings Arrow Head tool and moralizing upon the many reasons why Jennings's Arrow Head tools should be used by all mechanics.

This is an entirely new idea in advertising. The series of advertisements is being prepared under the personal direction of Mr. A. B. Jennings of the firm.

When Writing Advertisers Please Mention the American Carpenter and Builder.



USE Crescent Nails In Your Roofing Work

With Crescent Roofing Nails you can put on more roofing in less time than with the old style tin plate and nails—and Crescent Roofing Nails will last much longer.

The stems of Crescent Roofing Nails are riveted both sides of head and they cannot leak as they are in one piece. The heads are thicker than the tin plates, this prevents their rusting out.

The heads of Crescent Roofing Nails are large—they have more bearing on the roofing and this prevents it from tearing off.

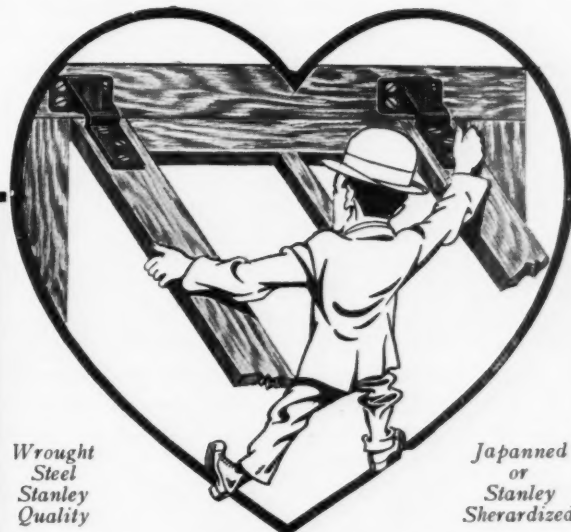
Crescent Roofing Nails have a good true point, which enables the roofer to make straight laps. Their large head prevents them from being driven through the roofing as is the case with the old style roofing nail or wire ringheads.

Crescent Roofing Nails are being extensively used. Be sure YOU use them on your next roofing job—they will save you time and they will give you better satisfaction.

Crescent Roofing Nails are made 1 inch and 1½ inches long.

You can get Crescent Roofing Nails from your supply man. If he should not have them write us for descriptive circular, samples and name of dealer in your locality from whom you can get Crescent Roofing Nails.

Crescent Brass and Pin Company
DETROIT, MICHIGAN



Wrought
Steel
Stanley
Quality

Japanned
or
Stanley
Sherardized

"PEERLESS" Storm Sash Hangers and Fasteners

Just the hardware you want for your Storm Sash. Once applied, no tools are needed to take down or put up the Sash. Full length screens can be hung on the same hooks. The Fasteners hold the Sash firmly in place either open or closed.

Write for Circular "A". It tells the whole story.

THE STANLEY WORKS
New York NEW BRITAIN, CONN. Chicago

High Grade Material—Low Grade Price Satisfied Customers—More Profit for You



As a contractor and builder you are as directly and as vitally interested in the quality and price of lumber as are the people you build for.

You can satisfy your customers easier and more surely when you work up the high grade stock you get from us than if you have to contend with the inferior grades of the Line Yards.

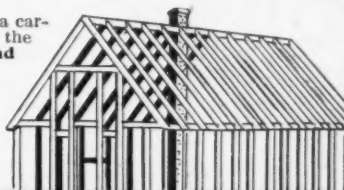
Your work is easier; you can put up a better building in less time—and we'll save you a good sum on your lumber.

Write us for estimate on what you want. The next time you are in the market for a carload of lumber, come to Dubuque. We want to show you the largest and best stock in the Middle West—everything you need for a building;—and we will refund your railroad fare on a carload order.

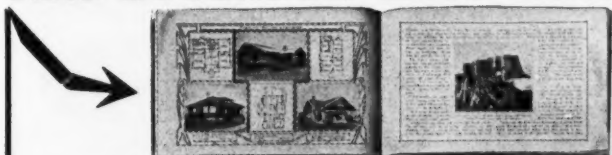
Besides, we want to get acquainted with you. We have a special proposition to make that will interest you.

Better get in touch with us at once, as lumber is going up. Write today.

PETER J. SEIPPEL LUMBER CO., 212 South Locust Street
Dubuque, Iowa



THIS BUNGALOW FREE BOOK



"BE THE BUNGALOW MAN OF YOUR TOWN"

The Bungalow covered with Red Cedar Shingles from "crest to foundation" has come to stay. Everybody likes it. Can be stained in any color to harmonize with surroundings. Stain costs only half as much as paint and is put on in one-half the time. You stain a bungalow once in five years while you paint clap-boards twice. And remember Washington Red Cedar Shingles Do Not Warp. Our Bungalow Book contains Photos and Floor Plans of genuine Pacific Coast Bungalows. Every contractor, carpenter and architect should get a copy. Full of up-to-date ideas and designs, also tells about the story of the wonderful long life.

RED CEDAR SHINGLE MFRS. ASSOCIATION
Representing over 200 Mills—Daily capacity 20 millions
480 Arcade Annex SEATTLE, WASH.

Genuine Peach Bottom Slate

THE BEST ROOFING MATERIAL IN THE WORLD

It has been in actual use over 170 years. It will not fade, but grow darker with age. It is the toughest and strongest slate in the world. It is the cheapest slate to use. Little or no breakage in shipping, and when once on the roof practically speaking will need no repairs at all, as long as your building may stand.

FOULK JONES & SONS Manufacturers
SLATE HILL, PA. DELTA, PA.

When Writing Advertisers Please Mention the American Carpenter and Builder.

A "Whole Planing Mill"-Oshkosh Eveready Saw Rig

That is what the Oshkosh people claim for their saw rig. Their one effort has been to make it not only a mere saw rig, but a machine that could be made to do all of the more frequent planing mill jobs. To accomplish this, a full set of extra attachments is given free with it. In addition to a crosscut and a rip saw, these devices are included:

A jointer head that works on the plan of a first-class planer; fine tool, 2½ inches in size, that does smooth, nice work with no deep cut as the stuff leaves it.

A boring attachment to take bits of standard size, that fastens directly into the arbor itself.

A jig saw, 12-inch size, heavy and durable, made to stand up under the hard sawing actual carpenter work requires.

A sander, 10 inches in diameter, that has an entirely new method of holding the paper. This grip, the makers assure us, prevents paper-blisters and is very much more saving than the old styles.

A dado head of a special design of toughest saw-blade steel that can be procured.

An emery wheel, 6-inch size, an 18-inch saw gauge and an adjustable mitre device.

The makers inform us that these devices are not flimsy attachments, gotten up carelessly, just to give the "Eveready" saw rig a bargain look; but that much money, time and study have been expended to give the purchaser an excellent outfit that will never go back on him. Great care is being taken, in their advertisements, to impress upon him also the conscientious manner in which the "Eveready" and its attachments are sold.

"Guaranteed for Life," is their slogan, and they have assured us again and again that they mean every word of it.

They are so confident of the sterling quality of their saw rig that they will let any responsible carpenter or contractor put it into actual, every-day use for a whole week, and then take it back, with no charge for the trial, if he thinks he can get along without it.

Those who are interested in saving time and money can get full particulars of this offer by writing Oshkosh Mfg. Co., 316 S. Main St., Oshkosh, Wis.

✱

Campbell's "A Warm Story" and "Twice-A-Day"

The Campbell Heating Company of Des Moines, Iowa, and Minneapolis, Minn., have recently issued two most attractive catalogs which they entitle "A Warm Story" and "Twice-A-Day."

These booklets interestingly detail through illustrations and description the well known Campbell system of heating and the Campbell "Winter-Chaser" furnace.

The Campbell system is adaptable for school, church, library, business building, theater, etc., as well as private residence use.

In the Campbell system its rotary air movement takes the air supply for the furnace from the rooms of the house instead of from outdoors, thus continuously passing the air of the house through the heating oven every hour of the day and night. Outside air is used for ventilating purposes only.

The complete Campbell system features the brick heating oven in place of the galvanized iron-jacketed furnace; air moistening by the "water battery" of two barrels of water, which properly moistens the air of the house and further provides a wonderful reserve heat at night or when fire is low; the rotary air movement acting through a system of warm and cold air pipes and forcing the air of the house to pass continuously through the heating oven several times every hour; a solid steel plate heater made without the use of

Schacht

—Will Cut Down Your Hauling Expenses

All your hauling now being done by horses and wagons, can be easily handled by the Schacht Auto Truck, at a saving of 20% to 40%. There is no reason in the world why you should deprive yourself of this additional saving.

The Schacht 1 to 4 Ton Truck has no equal for carrying light or heavy loads. The expert workmanship, and superior materials used in the construction of the Schacht, are features which insure reliability and dependability.

Its speed of 10 to 18 miles per hour makes you sure of prompt deliveries at all times, regardless of weather conditions. The added cost of feeding, shoeing and harnessing horses is eliminated.

Every carpenter, contractor and builder should lose no time investigating this time-saving and money-making truck. Remember the coming winter with its deep snows and icy payments will be a great handicap to you, if you do your hauling with horses and wagon. Serious damage to your horses and delayed deliveries may result in a serious loss to you.

Insure yourself against the cold winter which kills thousands of horses each year by installing a Schacht truck now, and be sure of prompt and speedy deliveries at a reduced cost.

Write us at once for our free illustrated booklet, containing full information regarding the "Schacht." Address

**SCHACHT
MOTOR CAR CO.**

2846 Spring Grove Ave.
CINCINNATI, OHIO



When Writing Advertisers Please Mention the American Carpenter and Builder.



Be the Man Who Gives Orders

Don't forever be at the beck and call of some petty, tyrannical "boss." It is every American's right to be independent. Your "boss" of this year may be your subordinate of next if you make the effort to better your position. But you must have special and individual preparation to rise above the rank and file. We offer you an opportunity to become the man who gives orders. To carpenters, bricklayers, and all men in building trades, we offer a short but complete course in DRAFTING.

Estimating, Plan Reading, etc. BY MAIL

You know the advantages of being able to read plans and to estimate, and the opportunities for promotion and prosperity that come to those with that ability. We can positively teach you, with our simply written, practical lessons. Hundreds of plans of buildings, in course of construction in Chicago, are studied from.

If you are a bricklayer, mason, carpenter or builder, you need this course—it will bring you higher wages. If you are a foreman or superintendent, you need this course—it will enable you to become a successful contractor. If you are a contractor you need this course—it will help you to figure closer. It will eliminate mistakes and increase your profits.

The lessons are approved by experienced Chicago architects. We have partial courses to fit your individual need, if you have had previous experience. Start now on your journey to success. Don't say you can't do it—you can; don't say you haven't the time—take it; don't say you haven't the money—earn it as you study. Determine now whether you will advance in salary and position or let other men go ahead of you. Send for free folder, now.

CHICAGO TECHNICAL COLLEGE

654 Athenaeum Building, Chicago, Illinois

Short resident courses in our Chicago school in Architectural, Mechanical and Structural Drafting. Low tuition. Day and evening classes. Ask for catalog X, if interested in the resident course.



Plumbing Supplies at Manufacturers' Prices

Underbid your competitors—buy direct from a manufacturer and save 30% to 60%. We supply everything used by plumbers and steamfitters and give you wholesale prices on entire line. Satisfaction guaranteed or money refunded and freight paid both ways. Outfits and supplies ready for immediate shipment.

Complete High-Grade Bathroom Outfit \$35

Lavatory and full sized tub of good quality. White Porcelain Enamel over gray cast iron, heavily nicked faucets; Vitreous China Closet, Oak Seat, and copper-lined tank illustrated above.

Pneumatic Water Supply System \$40

Black steel tanks (145 gallons), 2 1/2 inch. Double Action Combination Air and Water Pump, brass lined; pipes, valves, gauges, fittings, complete.

Heating Plant \$95

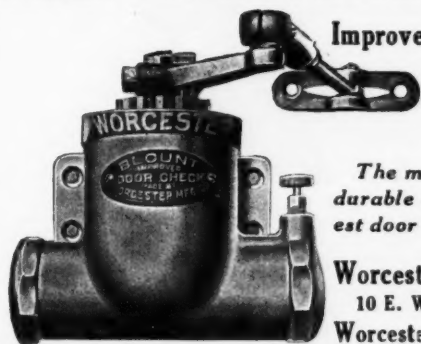
and up, according to size and nature of building—send plans and specifications and we will furnish estimates and save you 30% to 60% on the job.

Write for Complete Wholesale Catalogue and use it for a reference for bidding and ordering.

CHELSEA MANUFACTURING & SUPPLY CO.

134 W. 24th St., New York City Department F

THE WORCESTER



Improved BLOUNT
DOOR
CHECK

The most certain,
durable and strong-
est door check built.

Worcester Mfg. Co.
10 E. Worcester St.
Worcester : Mass.

Young Men

Prepare for good positions in

CARPENTRY AND BUILDING

Class forms in October. 9 months course

For illustrated circular, address

PRATT INSTITUTE, Dept. C.

Low expenses

BROOKLYN, N. Y.

Hurry that Material

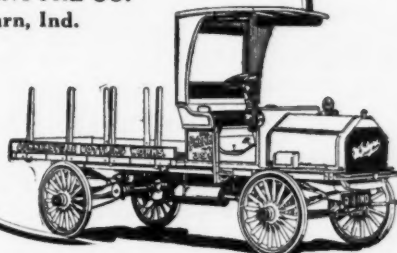
with a MOTOR TRUCK.

Write Us This Minute

We have it at prices within reach.
You are wasting time and money with horses.

W. H. McINTYRE CO.
Auburn, Ind.

Catalog
AC



SPECIFY THE JAHANT DOWN DRAFT FURNACE

ARCHITECTS!

BUILDERS!

CONTRACTORS!

Don't run risks.

It's an established fact that nine-tenths of the time you will be condemned for using poor judgment should you specify a steam or hot water heating system.

The heating requirements of residences, flats, schools, hotels, churches, etc., vary according to climatic conditions, size of building and number of rooms, style of architecture and nature of material used in construction.

The Jahant warm air system costs less and is easier to install than other systems. It is easiest to care for and delivers plenty of heat at a saving of 1/4 to 1/2 in fuel bills.

We guarantee the Jahant, make prompt deliveries and prepay all freight.

Our free illustrated book gives general specifications, descriptions and prices. It explains our co-operative policy of furnishing without cost to you, special blue prints and specifications to be submitted with your building plans and tells why it will pay you to specify the Jahant.

THE JAHANT HEATING CO., 85 Mill Street, Arkon, Ohio
Furnace Builders for more than 30 years.

WE SEND BLUE PRINT PLANS-FREE

When Writing Advertisers Please Mention the American Carpenter and Builder.

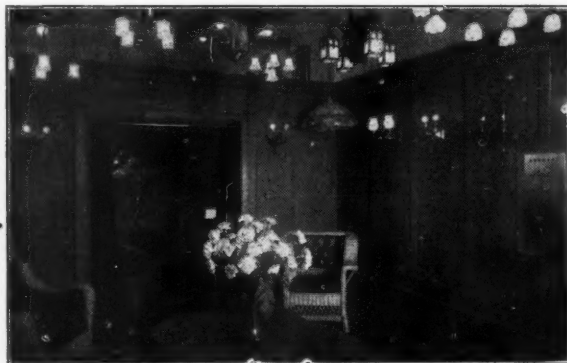
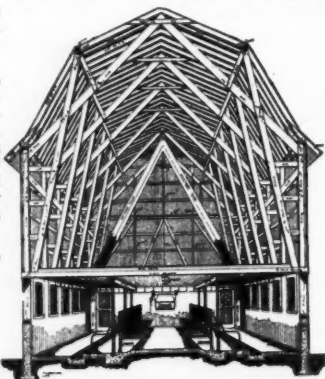
Free Book About Dairy Barns Write For It Now!



The world's greatest dairy barn expert will help you make more money. He has written a book about essential features of dairy barns; plank frames; King system of ventilation; proper width and arrangement; lighting; stable floors; site, size, appearance, design, drainage and equipment; with floor plans. He also makes a special offer of complete working blueprints of dairy barns of various types and sizes, and tells how you may secure free the help of our architectural department.

Simply answer these few questions and "Helpful Hints for Barn Builders" will be mailed free. For whom do you expect to build or remodel dairy barns? (Give names and addresses.) When? For how many cows? Address

James Mfg. Co.
(Sanitary Dairy Barn Equipment)
8475 Cane St.
Ft. Atkinson, Wis.



The above cut shows a corner in a display room finished with

DECO VENEER

It is not an imitation. It is made of natural wood of the best quality of both foreign and domestic timbers.

Panels furnished either finished or unfinished. Unfinished panels are sanded ready for the finish.

For wainscoting and similar construction, panels with strips, caps and base are furnished ready for installation. No mill work necessary.

Deco is used for wainscoting, window backgrounds, bank and bar fixtures, and all interior decorations where ply veneers are used.

Contractors and builders have found Deco a most satisfactory substitute for old style ply veneers and more economical.

We want agents in every city and town. Write for our agency proposition.

Illustrated catalog sent on request.

Deco Manufacturing Company
Indianapolis, Indiana

cement, putty or asbestos rope and that is steam, gas and smoke tight.

The Campbell system accomplishes its results with great economy of fuel and great gain in the quality of the air provided. It secures safety from fire, great durability, cleanliness, ease of management, evenness of heating, warm floors and it has a practical air moistening method.

The booklets—"A Warm Story"—devoted to the use of the complete Campbell system in residences, and "Twice-A-Day"—detailing the Campbell "Winter-Chaser" furnace as used with the Campbell system of heating—will be mailed to all readers of the AMERICAN CARPENTER AND BUILDER writing the Campbell Heating Company at 1101 Walnut Street, Des Moines, Iowa.



The Yankee Level

The Yankee compound level which is manufactured by the Frost and Adams Company of Boston, Mass., is an instrument for simple leveling and laying off horizontal and vertical angles, where speed and ease, or manipulation rather than precision is to be attained.

The workmanship and materials throughout this instrument are of the best. The moderate cost was attained by eliminating complicated and costly features, while all the elementary principles have been retained in the simplest possible construction.

A 10-inch erecting telescope of 12 diameter power, with



Frost & Adams Co., Level

ground and graduated level attached, is held by a swivel, forming the horizontal axis, around which the vertical arc of 1½-inch radius revolves. This arc is divided to single degrees and read by an index line placed on the standards. A rigid double standard carries the upper element, and between this and the vertical center, a 3½-inch diameter plate is held, upon which the vernier is engraved, giving a reading of five minutes on horizontal angles.

The horizontal circle is cast as one solid with leveling head, four leveling screws are provided, shifting centre, large diameter foot plate, and a substantial, yet graceful tripod head, form the lower elements of the instrument.

A circular describing the Yankee in detail is issued by the company and any AMERICAN CARPENTER AND BUILDER reader can secure one by writing the Frost and Adams Company, 31 Cornhill, Boston, Mass.



Circassian Paneling Attractive

The popularity of paneling for use in various rooms continues to grow with the result that builders everywhere are finding it to their great advantage to be thoroughly posted in the many forms of this finish.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Artificial Marble and Sanitary Flooring

Announcement:

Arrangements have been completed whereby this corporation has acquired the exclusive selling agency for the most complete and authentic book of its kind, "A TREATISE ON ARTIFICIAL MARBLE AND SANITARY FLOORING." This book, containing complete formulas and detailed instructions for the manufacture of artificial marble for various purposes, marbleized facing for concrete blocks, brick, etc., and Sanitary Flooring for use over wood or concrete base, will be sent prepaid upon receipt of price—\$2.50.

WHY PAY FOR SO-CALLED "RIGHTS"? The patents on this composition have expired; we can supply any or all necessary materials in any desired quantities; also molds and utensils required in your shop.

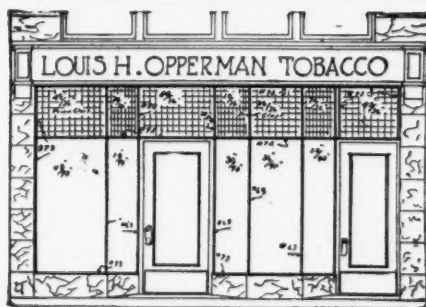
Installation of complete plans and personal instructions in the manufacture of products—our specialty.

Artificial Marble Supply and Equipment Company

374 Market Street

::

NEWARK, N. J.



FRONT ELEVATION.

If You Only Knew

how carefully Petz Bars are made, how uniformly perfect they come from our factory, and how completely they fill the demand for a bar at once strong, artistic and safe, you would never even consider the use of another.

We want every builder and architect to know about Petz Bars, so that he can specify and use them with perfect confidence. For this purpose, we will gladly send samples of bars for any purpose, as well as our valuable booklet on "Modern Store Front Construction." Experts endorse and insurance men recommend Petz Bars because they are easy to install and will not break glass. Send for the booklet today.

Detroit Show Case Co.

SOLE MAKERS

491 Fort Street, West, Detroit, Mich.



400 free suggestions for Carpenters, Contractors & Builders

Knowledge of present day building construction and familiarity with every detail of modern architecture is essential to the success of the up-to-date carpenter or contractor. Nor should the builder—the man whose money is behind the job—be without some information regarding the work, information which will enable him to judge whether or not he is getting value received for every dollar spent. The American School's new Plan Book, "Modern American Homes," and their great Cyclopedia of Architecture, Carpentry and Building, will give you the information you need in the most accessible form.

The New Plan Book

contains hundreds of valuable suggestions, besides 108 plates, complete plans for every style of the modern American home from the medium priced cottage to the most palatial suburban and city residence; also a large variety of tent houses, garages, boat houses, apartment buildings, libraries, churches and institutional buildings—the best in modern architecture by the greatest American Architects. This great book of plans is 9 1/2" x 13" in size, printed on special paper and substantially bound.

The Cyclopedia of Architecture, Carpentry and Building

consists of ten massive volumes: 4,760 pages, 7 x 10 inches; 4,000 illustrations, full page plates, building plans, diagrams, etc.; hundreds of valuable tables and formulas; carefully cross-indexed for quick, easy reference.

This great work covers everything in the building professions, from the first rough sketch of the architect to the acceptance of the finished structure. It includes wood, stone, steel, and reinforced concrete construction; estimating and contracting; a study of the Greek and Roman Orders; interior finishing and decorating; and modern house lighting and sanitation.

Partial Table of Contents

Mechanical, Freehand, Perspective and Architectural Drawing, Lettering, Pen and Ink Rendering, The Orders, Superintendence, Strength of Materials, Masonry, Reinforced Concrete, Carpentry, Steel Square, Stair-Building, Hardware, Steel Construction, Roof Trusses, Practical Problems, Estimating, Contracts, Specifications, Building Law, Sanitation, Sheet Metal Work, Electric Wiring and Lighting.

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With every order for a Cyclopedia we will include the Plan Book, absolutely free of charge and send you the Cyclopedia and the Plan Book, express prepaid, for seven days' free examination. You keep the books a full week—examine them thoroughly at your leisure—and if they don't meet with your expectation they may be returned at our expense. Remember—the complete set, Cyclopedia and Plan Book, are sent free upon receipt of the coupon below and we pay express charges both ways if they are not satisfactory.

Another Free Offer With each set is included a year's Consulting Membership, regular value \$24.00, entitling you to the free advice of a corps of Expert Architects. This will give practical help in handling building problems which are too specific to be taken up in detail in the Cyclopedia. This service alone is worth more than the first cost of the books.

American School of Correspondence, Chicago, U. S. A.

THE FREE PLAN BOOK COUPON

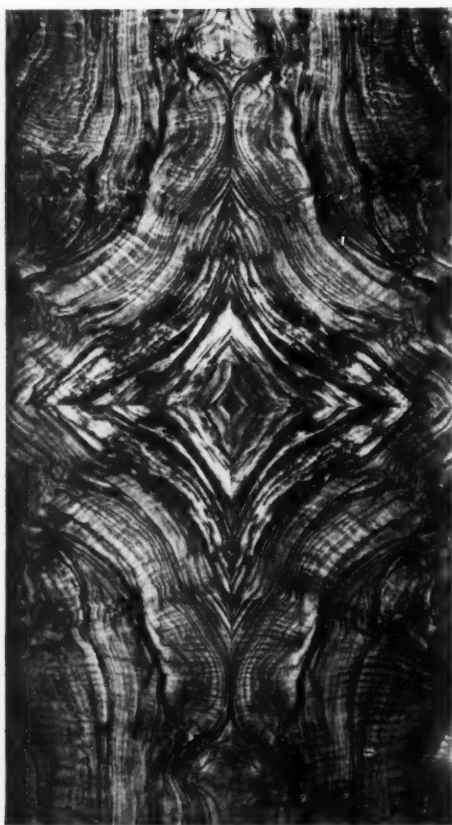
American School of Correspondence, Chicago, U. S. A.

Please send Free Plan Book also Cyclopedia of Architecture, Carpentry and Building for seven days' examination. I will send \$1.00 within seven days and \$2.00 a month until I have paid \$24.80 for Cyclopedia (Plan Book included free), or notify you and hold books subject to your order. Title not to pass until fully paid.

A. C. & B.

NAME
ADDRESS
OCCUPATION
EMPLOYER

When Writing Advertisers Please Mention the American Carpenter and Builder. A. C. & B. 10-12



Strikingly Beautiful Piece of Circassian Walnut Paneling

Paneling is popular, first, because it gives an entirely distinctive effect to any room that it is used in, and secondly, because it is in itself beautiful and artistic.

Probably the largest concern in this country engaged in the manufacturing of built-up veneers as panels is the F. Eggers Veneer Seating Company of Two Rivers, Wisconsin.

This company make their built-up veneers in many highly figured domestic and foreign woods. They are equipped to turn out paneling of practically any size desired up to 17 feet in length. If longer lengths are desired they can be easily spliced.

A specimen of the Eggers' Circassian Walnut paneling is illustrated here. It can be readily seen this paneling offers a certain distinctiveness in a thoroughly perfect and pleasing effect.

AMERICAN CARPENTER AND BUILDER readers will undoubtedly find it to be to their advantage to keep in touch with the latest that is being done in paneling work, and can, through

addressing the F. Eggers Veneer Seating Company, at Two Rivers, Wisconsin, receive considerable valuable and interesting information pertaining to built-up veneers and paneling.



Motor Truck Notes

A Rochester contractor had a carload of cement to unload (52 tons) and it had to be unloaded in four hours' time or he would have to pay demurrage. The round trip to the place where the cement was to be delivered was four miles.

A Kissel three ton truck started at 5 o'clock in the afternoon to deliver the cement and at 8:10 o'clock it was all delivered. The total distance traveled was 33 miles, more than six and a half tons being carried on each load. This figures out at 115 per cent overload on every trip.

"While you're talking about trucks, don't overlook the utility of runabouts and semi-racers in many lines of business. It's an interesting story, and a word in point might not be without interest," says G. C. Frey, sales manager of the Kissel Motor Car Company.

"Here is one from Louis F. Becker, of Dallas, Texas, a real estate man. Mr. Becker says it would be impossible for him to carry on his business if deprived of his KisselKar. There are several like communications from men in Mr. Becker's line.

"Mr. P. L. Sisson, a lumber dealer of Potsdam, N. Y., states that the saving of time and money in the use of the motor is immeasurable. So it goes. KisselKar trucks are doing fine work, but the utility of so-called pleasure cars seems to me to be equally as great a boon to the business world."

The question is frequently asked as to what automobile concern turns out the largest variety of cars. The Kissel Motor Car Company of Hartford, Wis., asserts that it manufactures the most varied line of motor vehicles in America, if not in the world. The KisselKar line consists of both pleasure and commercial cars. In pleasure cars it makes thirty, forty, fifty and sixty horse power chassis with touring, coupe and limousine bodies. A fifteen hundred pound light delivery wagon and trucks of one, two, three, four and five tons capacity are also built by this company. The Kissel plant is unsurpassed in completeness.



THE "HAN-COT" SASH MOUSE

for placing sash cord in window frames.

59 in. long, consisting of fastener, chain and weight. Takes but an instant to insert the cord in the fastener, or release it, and does away with the tying and untying necessary when using the old style chalk line and piece of lead.

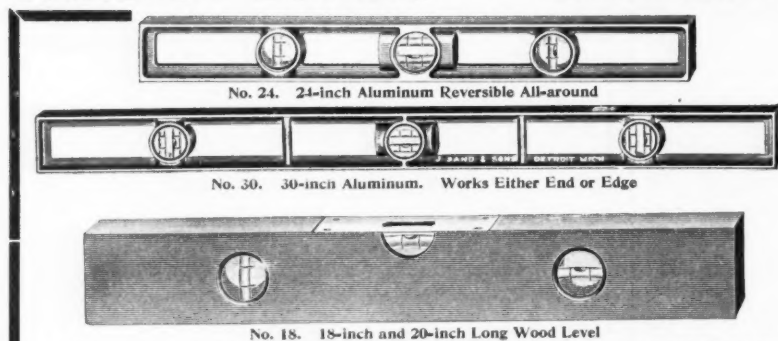
Sample sent postpaid for 30 cts. if your dealer hasn't it.

HANDLEY & COTTERMAN

Atlas Bldg., 164 N. Wabash Avenue, CHICAGO



SAND'S PLUMBS AND LEVELS—ALWAYS READY TO USE—NOTHING TO GET OUT OF ORDER



No. 24. 24-inch Aluminum Reversible All-around

No. 30. 30-inch Aluminum. Works Either End or Edge

No. 18. 18-inch and 20-inch Long Wood Level

Be sure you ask for Sand's Plumbs and Levels. If you can't get them write to us. Better write and get our catalog anyway.

Sand's Plumbs and Levels are made by men who have had 25 years experience in the building line. Sand's Plumbs and Levels are thoroughly accurate. They are strong, light and durable. There are over 75,000 Sand's Plumbs and Levels in daily use.

Our new model aluminum levels are made of the best quality tested material. Our famous wood levels are made of thoroughly seasoned wood.

In our plumbs and levels the spirit glasses are protected from dust, dirt, moisture, etc., by a plate glass covering.

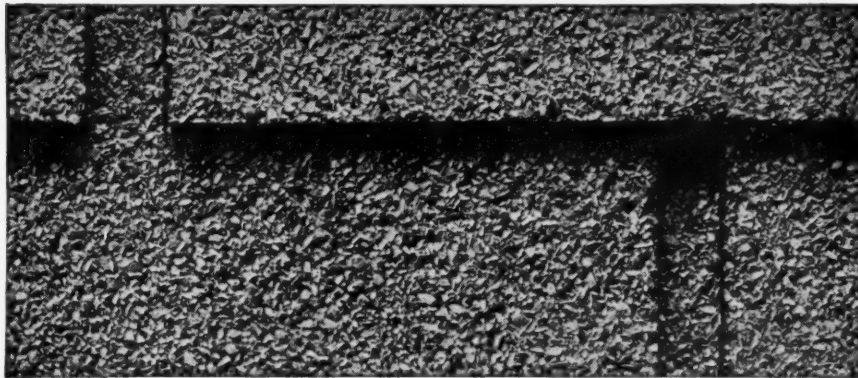
We make plumbs and levels in plain or brass bound finish. We can make anything in the plumb and level line to your order.

Our plumbs and levels are for sale by all good hardware dealers. Be sure you ask for Sand's—if you can not get them from your dealer WRITE US. Get our catalog and prices.

J. SAND & SONS

1023-25 Rivard St. Detroit, Mich.

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This Cut Shows the surface of Flex-A-Tile Shingles—Beautiful, Convenient, Durable.

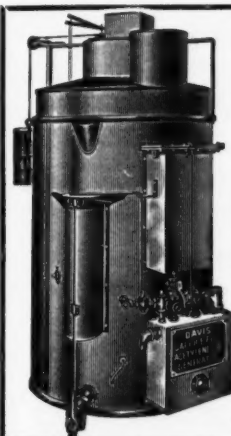
FLEX-A-TILE ASPHALT SHINGLES

Are made of solid asphalt, into the surface of which chipped slate or granite is rolled until it becomes an actual part of the shingle. The result is a beautiful stone-like appearance and a wonderfully artistic and durable roof.

Flex-A-Tile Asphalt Shingles are 8 by 12½ inches in size. It only requires 424 of them to cover a hundred square feet. They are easily and quickly laid—are low in cost and will last as long as the house stands. They are also fire resisting.

*We want to send you a sample
free. Send us your name.*

THE HEPPE'S COMPANY 1010 45th Avenue Chicago, Illinois



Mr. Contractor and Builder

Why not equip the home or other building you are erecting with

Davis Acetylene Lighting?

You can greatly increase your income by selling and installing Davis Acetylene Lighting Systems for new buildings and during dull seasons for buildings already erected. No previous experience required and we help you get started. Write us for cost of equipping a building and for our terms to salesmen.

Architects desire to recommend the best and we, therefore, invite them to carefully investigate what we have to offer.

Davis Acetylene Company
90 Crawford St., Elkhart, Ind

Write for Particulars

and find out all about our

Triumph Lights

System, Stand and Portable Lamps

before you put in your lighting plant or lamps of any kind, and avoid disappointment



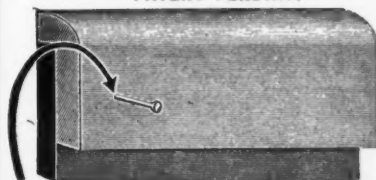
A 300 Candle Power Shadowless Light that can be turned up and down like gas. They meet all requirements of Home, Store, Church or business lighting, in or out doors at less than half the cost of Kerosene or Electricity, simple enough for any one to install and operate. Write for ACB catalog, it tells all about them.



BRILLIANT GAS LAMP CO.

Dept. 20 182½ N. State St., Chicago, Ill.

THE DENNIS "CLINCHER" FELT WEATHER STRIP (PATENT PENDING)



**NOTE—NAIL PASSES THROUGH
BOTH MOULDING AND FELT.**

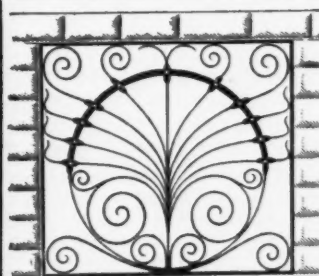
Specify The

W. J. Dennis Clincher Felt Weather Strip

**If You Want
the Best
Made**

Manufactured only by

W. J. Dennis & Co. - 2226 W. Lake St., Chicago
Free Sample to any address for your Hardware dealers' name.



to go in any man's library. Do you want it?

DOW WIRE & IRON WORKS

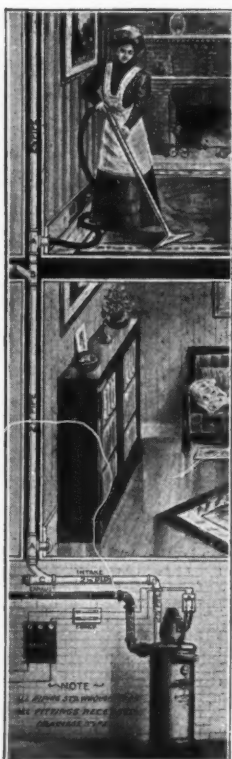
Incorporated
Louisville, Kentucky

Mr. Builders— If you are lucky enough to read this advertisement, and wise enough to write and tell us what you buy in

IRON, BRASS and BRONZE

we will send you catalog that is attractive enough

When Writing Advertisers Please Mention the American Carpenter and Builder.



Building for the Future

requires that you make provision for stationary vacuum cleaning precisely as you make provision for stationary heating, lighting and plumbing.

Really efficient air cleaning depends upon the volume of air moved in a given time, and this requires piping of ample capacity. Therefore you should always use 2½-inch pipe if you want to be able to install the most efficient and economical system of cleaning.

THE TUEC STATIONARY Air Cleaning System

operating in connection with piping of this size does the most effective work at the lowest cost. Competitive tests prove conclusively that the TUEC is superior to all other vacuum cleaning systems in the following particulars:

- 1—Greatest air capacity per minute at openings.
- 2—Sufficiency of vacuum inside every orifice.
- 3—Lowest cost of operation.
- 4—Simplicity of design and strength.

- 5—Nothing to wear out or make trouble.
- 6—Perfect lubrication.
- 7—Noiseless running.
- 8—Labor-saving tools.
- 9—Minimum floor space required.

More than two thousand buildings were equipped with TUEC systems during the past year and a thousand more, now in course of construction, are being piped for TUEC installation.

We make a special truck machine for buildings which cannot be piped.

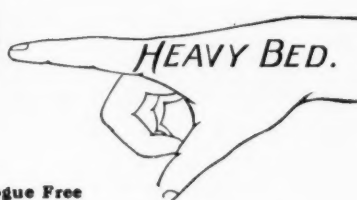
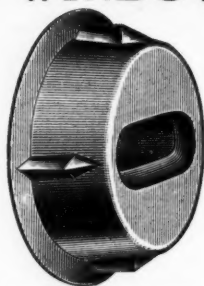
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THE UNITED ELECTRIC COMPANY, 30 Hurford Street
CANTON, OHIO
Tuec Companies in All Large Cities

THE IVES PATENT WINDOW STOP ADJUSTER

Prevents dust, drafts

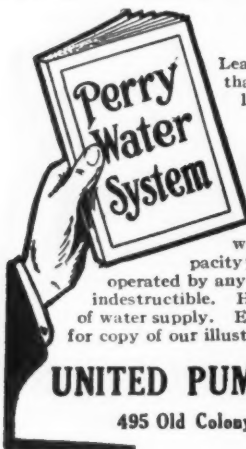
and window rattling



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1 piece of metal, will not cup, bend or turn in tightening screw.

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Learn all about the only system of water supply that eliminates the storage of water. That delivers water fresh from the well. The

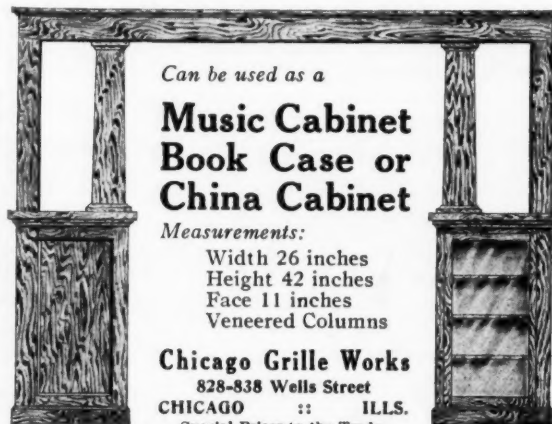
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provides all the conveniences of a city water works system. It is designed for large or small capacity; is easy to install in any old or new building—operated by any kind of power—economical and practically indestructible. Has more advantages than any other system of water supply. Every reader of this publication should write for copy of our illustrated catalogue. Address

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Measurements:

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Veneered Columns

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Containing valuable information
for the Architect,
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All the information you need
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Free for the asking.

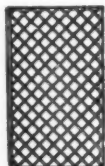


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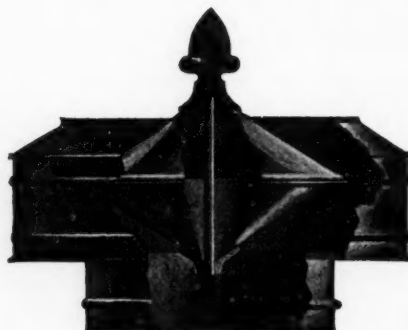
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The best columns for porches, pergolas or interior use.

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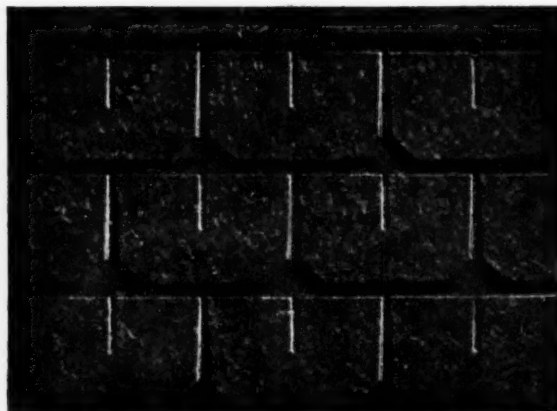
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Stock designs or made to order
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Wouldn't you like to play, right in your own home, all the old-time melodies---all the church hymns---all the great marches---all the wonderful operas---and do it without learning to play---without any practice at all---just as well as a musician?

With a Crown Combinola

You may become as familiar with the music of Beethoven, Wagner, Liszt, Chopin, and the other great masters, as you are with the news of the day, and that, too, without the drudgery of years of hand practice. You may get the same enjoyment in your own home as you would at the Metropolitan Opera in New York. You may have concerts, entertainments and church meetings without sending for someone who has learned to play.

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Always Ready to Play

It is always ready. It is not the silent piano found in so many homes, but one that anyone can play, classic music, grand opera, old-time airs, church songs, latest musical hits, the popular songs that everyone is singing and whistling, the newest waltzes and two-steps. All these you may play, perfectly, if you have a Crown Combinola.

Give This to Your Family

The best present you can make your family is a Crown Combinola. And you owe it to them. They have all done their share to make your home enjoyable. Now, give the family this one thing that will please them most. Let them have at home all possible musical advantages. It will please the wife and keep the children at home. And, don't forget, you will enjoy playing this piano just as much as any of the children.

GEO. P. BENT COMPANY

MANUFACTURERS

South Wabash Avenue, Chicago, Illinois

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Let us tell you of our special plan to introduce one Crown Combinola in your neighborhood. Let us tell you what we will do if you already have a piano. Let us tell you more about the Combinola, and send you a beautiful piano book, free. Write us, or send this coupon, to-day, while you think of it.

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This elegant design is one of our most popular styles. Moderate priced. Highest grade. Beautiful style. This piano may be purchased under our special plan. If you want a piano, let us prove to you the worth of the Crown.

Special Coupon

GEO. P. BENT COMPANY,
Wabash Ave., Chicago, Ill.

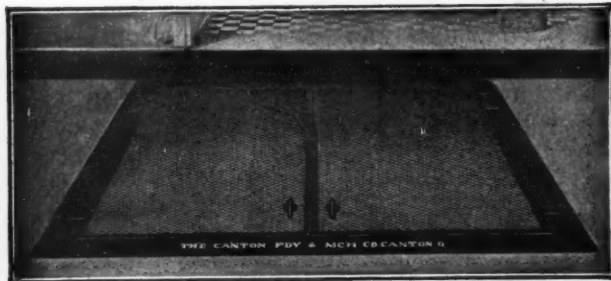
Tell me about your special plan to introduce one Crown Combinola in my neighborhood. Also send me your beautiful piano book, free of charge.

Name

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SIDEWALK DOORS THAT ARE FLUSH, FIRM AND NEAT



Made in 45 Sizes

THE CANTON FOUNDRY & MACHINE CO., Canton, Ohio

Are a credit to any building and an everlasting advertisement to the Contractor who installs them.

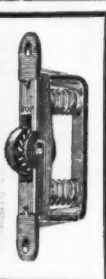
OUR SOLID IRON AND STEEL DOORS

ARE ALWAYS FLUSH, FIRM AND NEAT—No obstructions to stomp your toes. Locked and unlocked from either side. When open, passers-by are protected. Have water-drain to carry water to the curb. Illuminated doors also furnished.

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Simple **Saves Money**
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For Old as Well as New Windows
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SAVES 50 PER CENT OF COST; 40 PER CENT OF FUEL
Most Durable, Most Economical Furnace Sold



Has a perfect ventilating system for every part of the building

RESIDENCE HEATING PLANT

Hot air registers in five rooms; cold air return in two rooms; 40-in. Furnace, 20-in. Fire Pot, 28-in. Combustion Chamber, 10,000 cubic feet Heating Capacity.

Special Price, \$65

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Horizontal Furnaces with large doors or larger furnaces and more piping at proportionately low prices.

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KRAOPLATE
BLACKBOARD



KRAOPLATE

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The BEST Composition
Blackboard Manufactured

Easily Erected—Most Economical—Absolutely Guaranteed

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A HOT AIR FURNACE

For Less than
\$50 Complete

For 5 and 8 Room Dwellings

An unheard of Price and
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No Pipes No Lost Heat

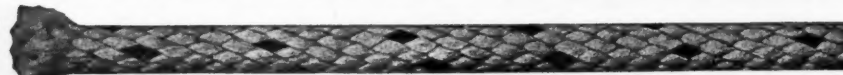
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SAMSON SPOT SASH CORD



Reg. U. S. Pat. Off.

Samson Cordage Works

Boston, Mass.

Made of extra quality stock, carefully inspected, and guaranteed free from the imperfections of braid and finish which destroy common cords so quickly. The spots on the Cord, in any color, are our trade mark. Don't be misled by imitations. Samples and full information gladly sent.



The Marvel locks shut automatically, is burglar proof, and ornamental. Is made of heavy wrought steel plates.

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OSKALOOSA IOWA

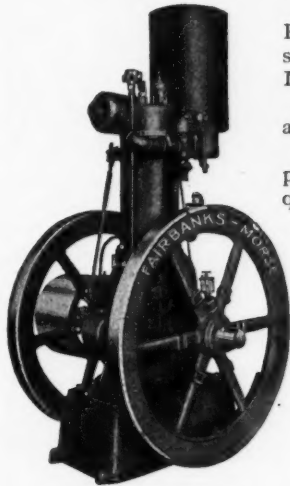


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More than Full Rated Power Developed on Kerosene, Gasoline or Low Grade Distillates.

Run with practically no attention. Quick starting. Less than 1 pint of fuel per horse power hour required. Figure the power you need and see how remarkably low these engines will cut the cost.

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Larger units up to 500 H. P.

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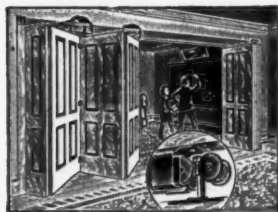
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Hoists, Trench Pumps, Water Systems, Electric Light Plants

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For sliding Accordion Doors and put a stop to your hanger troubles.

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AURORA, ILL. U. S. A.



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It will put chisels, plane bits—all edge tools—in better shape in less time than any stone he could use—there is no glazing of a Carborundum Sharpening Stone when properly cared for—it cuts clean and quick—other stones merely rub the edge on.

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A NEW METAL TILE

ABSOLUTELY WATER TIGHT—PERFECT FITTING

OF THE WELL KNOWN

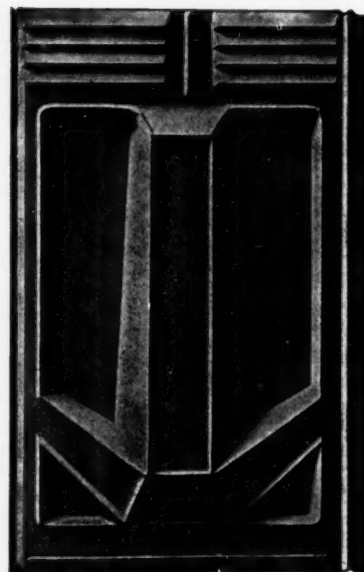
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Best Roofing in the World. Also Various Artistic Designs in Metal Ceiling

We also manufacture Cushman Metallic Shingles, Metal Tile, Cornice, Skylights, Ventilators, Eaves Trough, Conductor Pipe and all Styles of Roofing and Siding

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Kanneberg Roofing & Ceiling Co.
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of that Pantry Door. The everlasting "flip-flop" of the Butler's Pantry Door is not only very annoying, but is extremely dangerous. It pinches fingers, bumps heads and breaks dishes.

The RIXSON PANTRY CHECKING Floor Hinge

puts a stop to all these troubles. A perfect Floor Check at a low price.

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Makers of Sperry Casement Adjuster.

Fastens Anything to Masonry

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15 " 1-4" with Dollar Bill
10 " 5-16" screws Today

Money refunded if not satisfactory. Larger sizes on request. Write for free sample and booklet "Expansion Bolt Facts."

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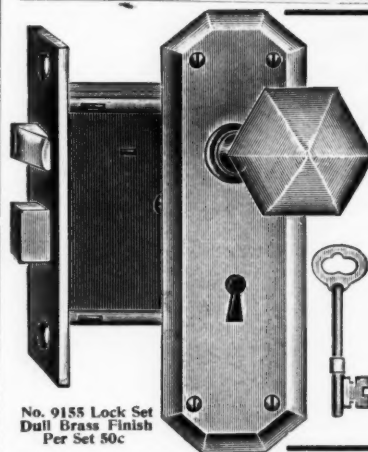
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1209A Fort Dearborn Building

CHICAGO



Normal



No. 9155 Lock Set
Dull Brass Finish
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The Newest, Strongest and most Convenient Coal Chute made. Prices also Lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside. Architects, Contractors and Owners are invited to write for descriptive circular.

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Winthrop Asphalt Shingles

are made by a patented process—They are tapered—lie flat and close together—Chipped slate or granite in rich natural colors is rolled into the exposed surface giving it a wonderfully artistic appearance—Colors are red and green—Being natural, they cannot fade or wash off. Winthrop Asphalt Shingles are very durable—very easy to lay—low in cost and highly fire resisting.

Let us send you a free sample

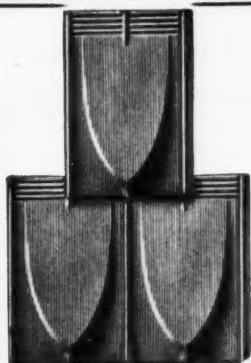
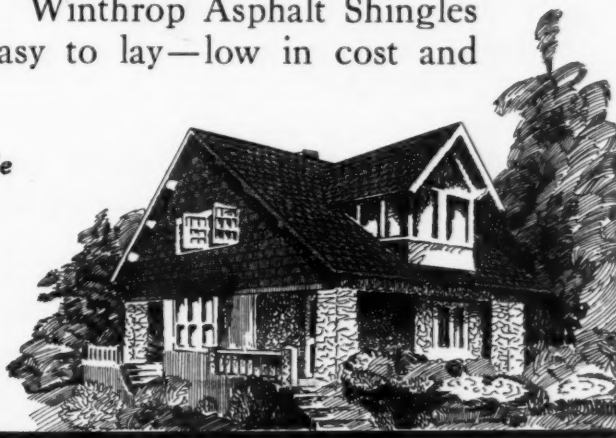
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Company**

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ILLINOIS



Style "B"—Showing Method of Laying

PLACE YOURSELF ABOVE YOUR COMPETITOR

AND SELL **"TITELock"** THE BEST

METAL SHINGLES made. They are business-getters and money makers. FIRE, WATER AND LIGHTNING PROOF.

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MILWAUKEE, WIS. KANSAS CITY, MO.



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*Increases the Renting and Selling Values and Attracts
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Builders and owners will find it a clinching argument to say "It's floored with OAK FLOORING." It is the biggest single feature to look for in any house or apartment building. It imparts an air of refinement and elegance. It is the modern flooring.

OAK FLOORING $\frac{3}{4}$ inch thickness by $1\frac{1}{2}$ inch or 2 inch faces can be laid over old floors in old homes or over cheap sub-floors at a very low cost. It is cheaper than carpets or pine flooring. When laid it has all the appearance of heavy flooring.

There is a solid satisfaction and lasting pleasure in the substantial and dignified appearance of OAK FLOORING.

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For durability, OAK is the best. OAK FLOORING laid thirty years ago, after very hard use, is still in good condition.

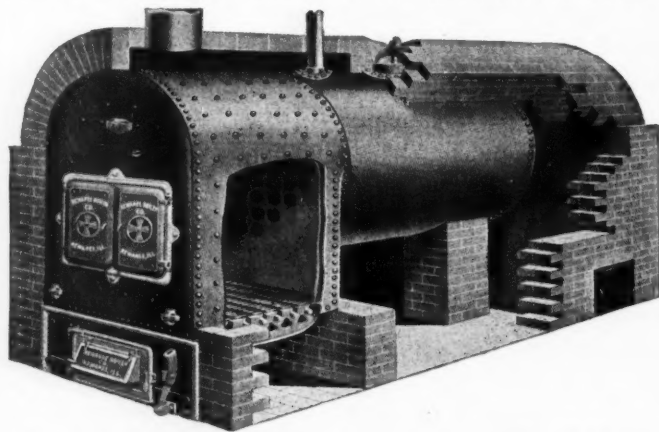
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KEWANEE Fire-Box Boilers

Have set a high standard for themselves and for all others, for a quarter of a century.



Their unbroken record of Success is easily accounted for by

The invariably high skilled labor employed,
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The high combustion chamber so essential to a perfect combustion and economy of fuel,
The long life of the boiler,
The slight expense for repairs,
The low water-line,
The low head room required,
The fact of being in a single piece,
The ease of installation,
The impossibility to crack right when you need it the most.

There is no investment which will produce the dividends that a **KEWANEE** boiler will.

There is no equal for Apartment Buildings, Schools, Theatres, Hotels, Hospitals and Manufacturing Buildings

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

Makes also the only KEWANEE Garbage Burning Water Heaters

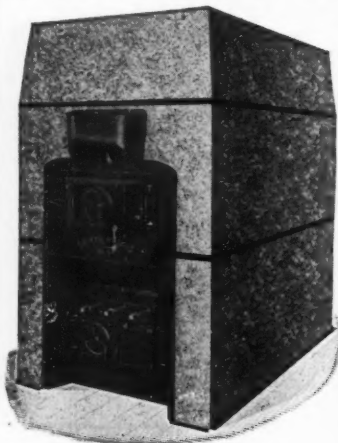
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We have made and sold thousands of steel furnaces in Chicago, and we have sold them everywhere, by mail, direct to contractors, builders and house owners, all over the country, from Maine to China. We don't offer them through dealers, for the DIRECT DEAL with the consumer is the most satisfactory to all concerned. It means a BETTER SERVICE—because of the direct interest of the maker in each contract—and it means BETTER PRICES, for the middlemen's profits are cut out.

In buying the Hess Furnace, you needn't have faith. You can buy it now, on trial, and test it before January 1st, 1913. We will deliver it at your station, with all

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Set it up and use it. If you're not pleased; not sure you have big value for the price—send it back to us—we paying return charges—and we won't claim one cent from you.

We don't offer you credit, however, for we require the price to be deposited with your local banker when you receive the goods. He holds it till the test is made, subject to the conditions outlined above, and gives it to you or to us, according to the result of the test. You take no risk, and you will save money.

Our furnace is made of steel, EVERY SEAM WELDED, and therefore permanently gas, dust, and smoke-tight. Made in six sizes, and burns any fuel. There is no furnace, better, at any price.

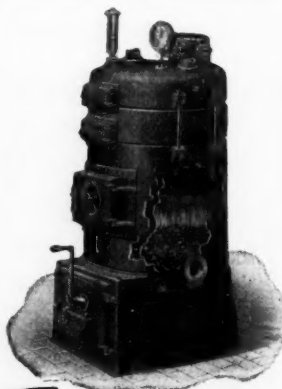
Our 48-page booklet on furnace heating is free. Ask for one. It will give you a lot of useful information on heating.

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920 Tacoma Bldg.

Chicago

We make these beautiful white steel medicine cabinets, cheaper than wood.



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At least, all of the
best builders are.

Doin' What?

**Why!
Specifying**

GILT EDGE Furnaces and Boilers

They have found it is easier to sell houses with a heating plant of established merit.

If you are going to build either a house or a hotel, it is worth \$\$\$ to you to get the Gilt Edge catalogue.

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is the ideal wall covering for any room in the house. Not only does it give a most charming restful appearance to the room but it can *always be kept fresh and clean*. And this makes it the *most economical* finish you can possibly have. It comes in 24 tints or colors that lend themselves to the most tasteful combinations, with stenciled borders where desired.

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Pearl and Main Streets Cincinnati, Ohio

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—A ROOM WITH—

"Cott-a-lap"

MADE in about 40 beautiful shades. Costs no more than good wall paper. Lasts for years. Protects walls. Softens sounds. Gives artistic effect not obtainable by wall paper.

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The Cott-a-lap Co.

Chicago, Ill. :: Somerville, N. J.

Really Good Paint Saves Time and Money

Take two brushfuls of paint—one of "High Standard" and one of any other brand—and see for yourself how much further "High Standard" goes.

And remember—it is not the thickness of the coat that gives protection, but the impenetrability of the coat.

Lowe Brothers
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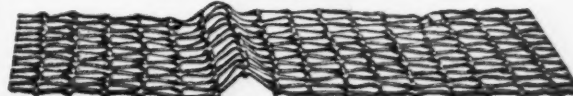
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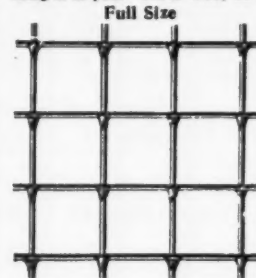
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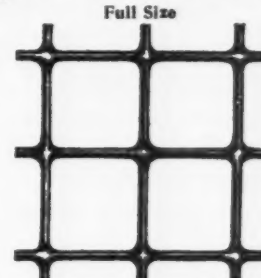
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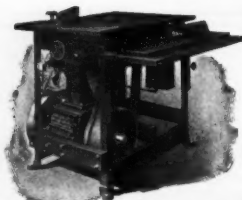
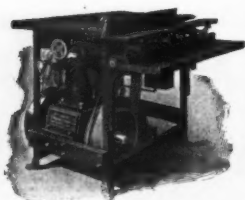
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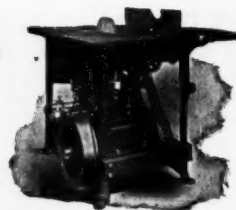
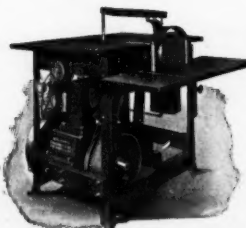


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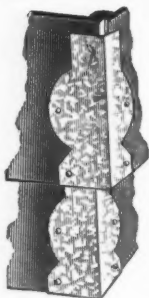
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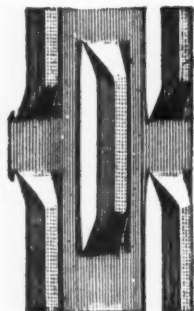
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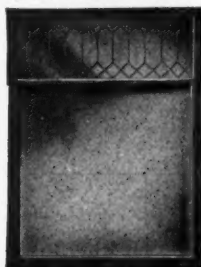
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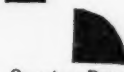
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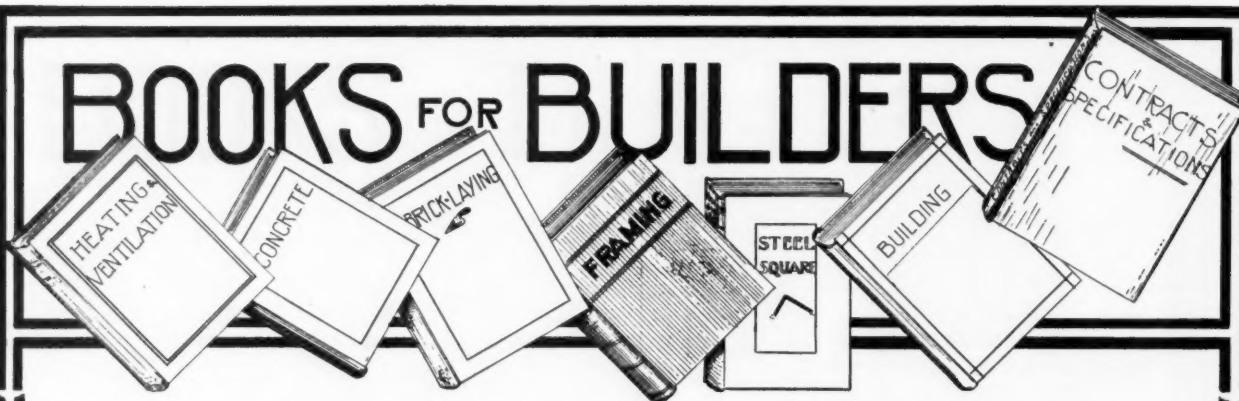
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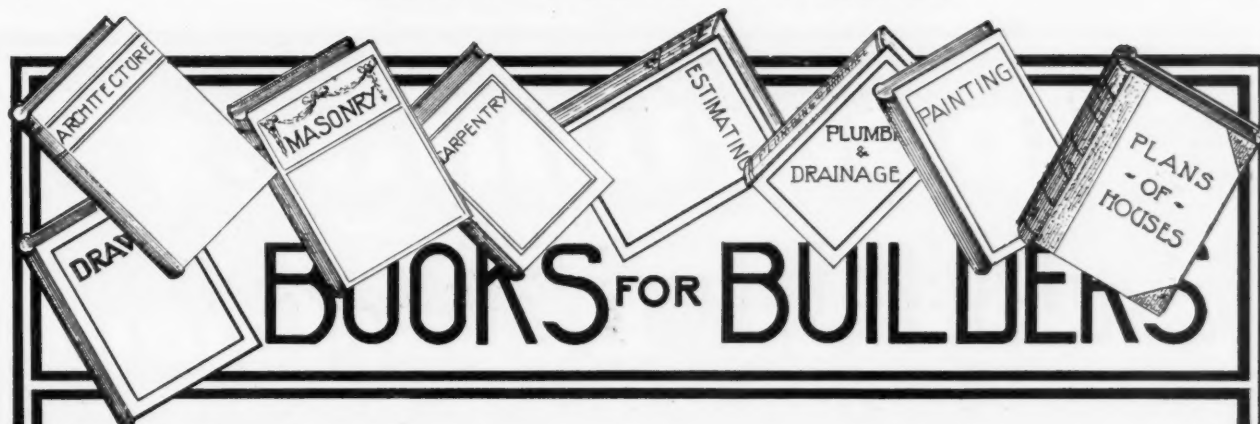
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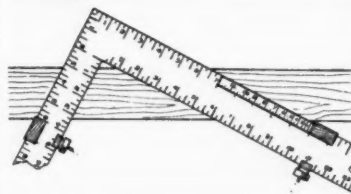
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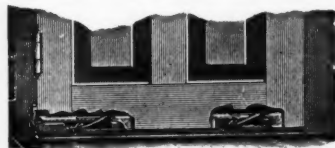
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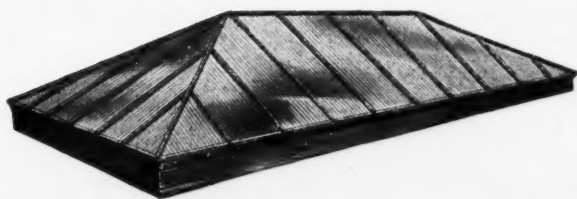
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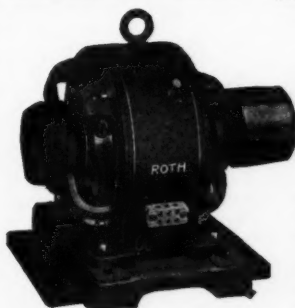
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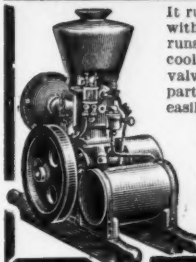
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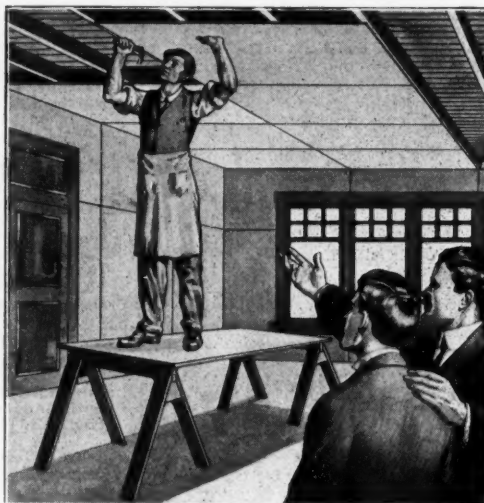
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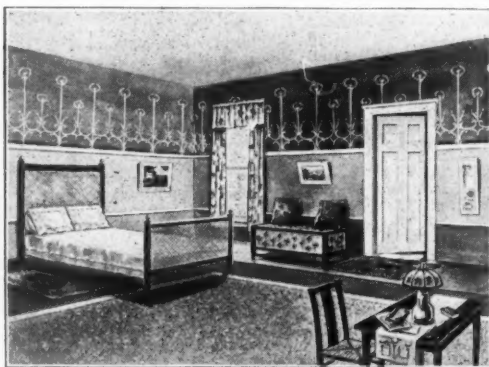
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Big illustrated book will give you dozens of ideas for better interior decorations. Book, big sample of wall board, complete set of blue print plans for model house, copy of \$5,000 Anti-Warp bond, letters from users—all free. Shows how builders, carpenters and contractors can increase their profits. Enclose 6 cents in stamps for packing and mailing.



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The demand for the **best** grade of wall coating is steadily increasing. Old slap-dash kalsomine methods prevail only in the cheap job districts. Owners of better class buildings have found superior decorating a tremendous asset in renting and selling property.

For 25 years we have specialized in wall coatings with the one undivided purpose---to supply the *highest grade materials possible to produce.*

Alabastine

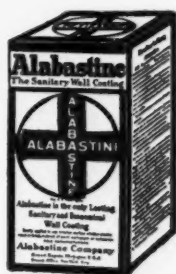
The Beautiful Wall Tint

In dry powder, ready to mix with cold water, applied with a regular 7 or 8-inch wall brush; packed in full 5-lb. packages, in white, tints and colors—also in bulk for large jobs.

Alabastine may be easily washed, if desired, from any surface which it has been applied to.

Alabastine, after being mixed, will remain in working condition for days, does not harden nor set in the bucket.

Full 5-lb. packages; white 50c. regular tints 55c. Also in bulk for large jobs.



Alabasco

The Flat Wall Paint

Alabasco is the highest grade, interior flat wall paint produced. It is washable and absolutely dependable. For homes we recommend the use of Alabasco in connection with Alabastine. At a little extra cost Alabasco can be used in places exposed to finger marks—along the stairs, nursery, lower part of bathroom and dining room, also kitchen and cupboards. These exposed places can then be washed with soap and water.

It comes in the same velvet-like water color tints as Alabastine. Is exquisitely soft and artistic on the walls and, properly applied, does not chip, peel or rub off. Comes in liquid form ready to apply.



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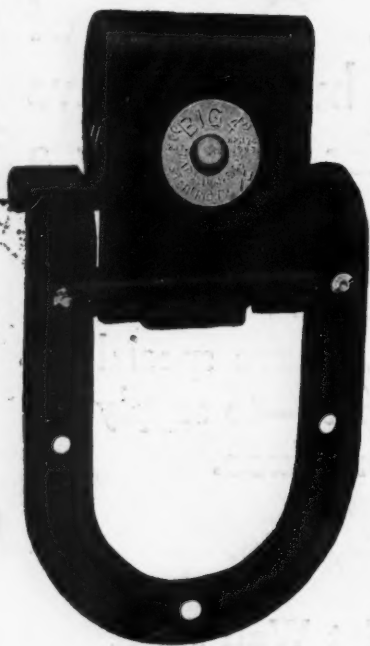
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WE INITIATE—NEVER IMITATE

"BIG 4" HANGERS

FOR

SLIDING DOORS



Patented April 24, 1906
Front View "Big 4" Hanger

Are easy to attach, and once in position, they cannot jump the track and can only be removed at the end of the rail.

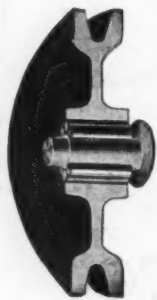
When the door hangs straight down the hanger is rigid and does not swing in the wind. The hinged-joint permits the door to swing out should anything bump against it.



View of "Big 4"
Hanger, showing
Flexible Feature

Wheels have roller bearings and all exposed parts are galvanized to prevent rust. Thousands of them are in use and giving perfect satisfaction.

Braced Rail



Sectional View
of Axle and
Bearings

Braced Rail is made of $1\frac{1}{4}$ inch x $\frac{3}{16}$ inch steel with brackets of the same stock. A lug is turned down which rests against the side of the building and acts as a brace, giving at least one-third more strength. The rail is furnished in 4, 6, 8 and 10 foot lengths, eight pieces of a length in a bundle.



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